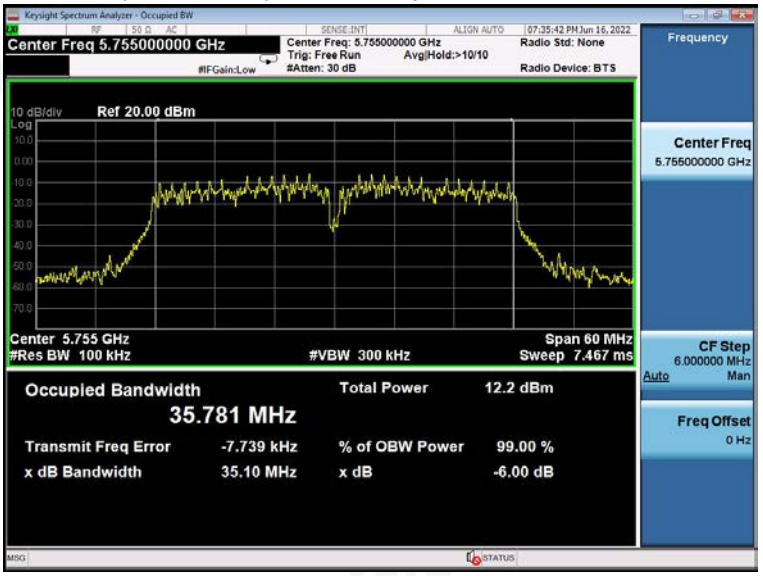
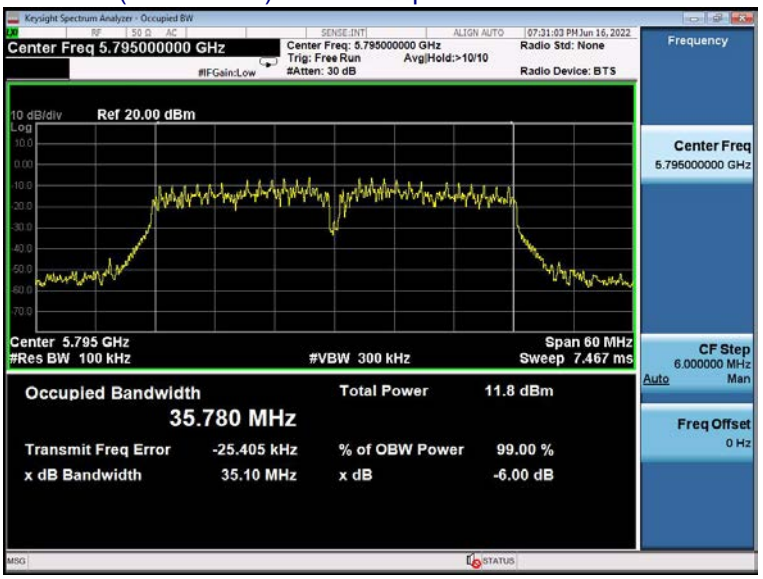
Test plot

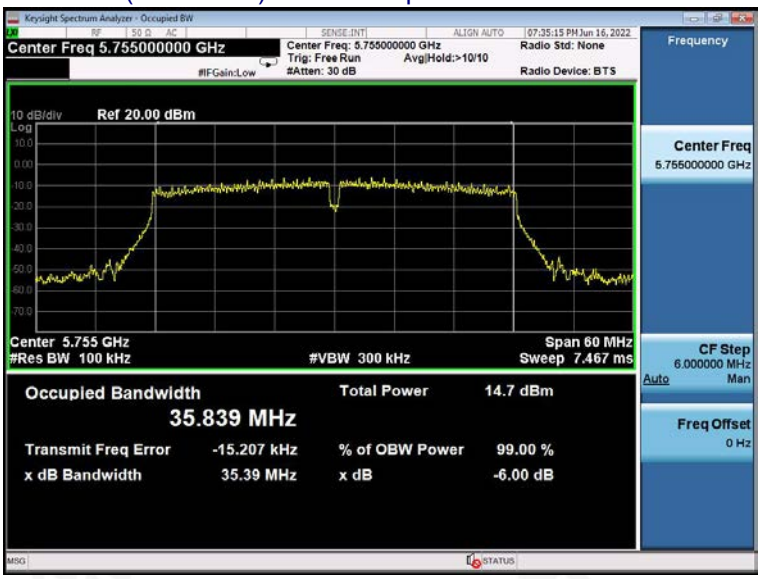
(802.11ac40) Bandwidth plot on channel 151



(802.11ac40) Bandwidth plot on channel 159

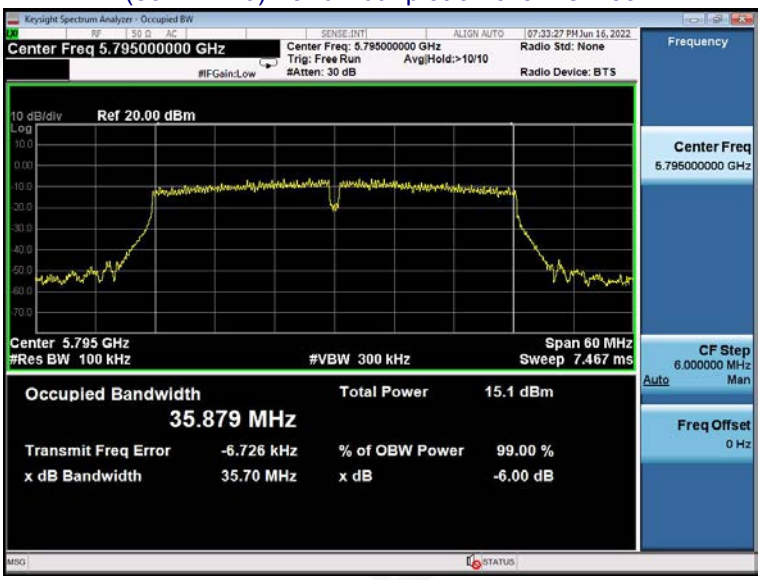


(802.11n40) Bandwidth plot on channel 151

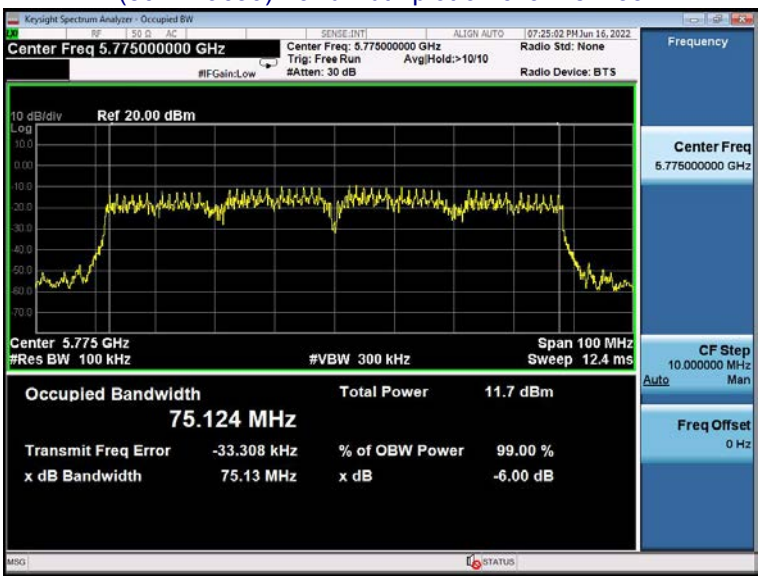


Test plot

(802.11n40) Bandwidth plot on channel 159

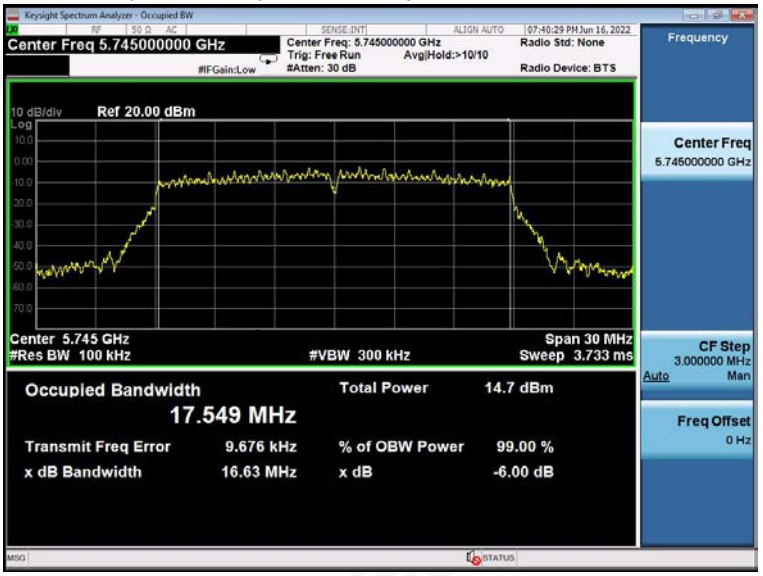


(802.11ac80) Bandwidth plot on channel 155

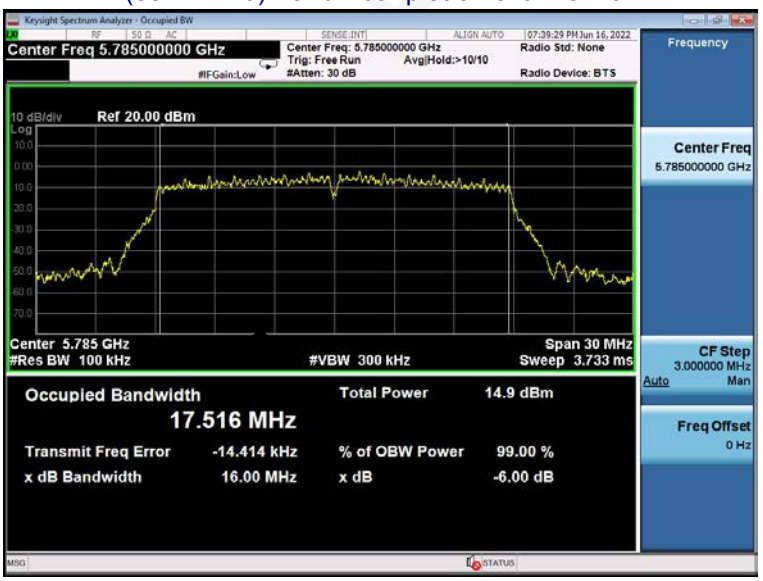


Test plot

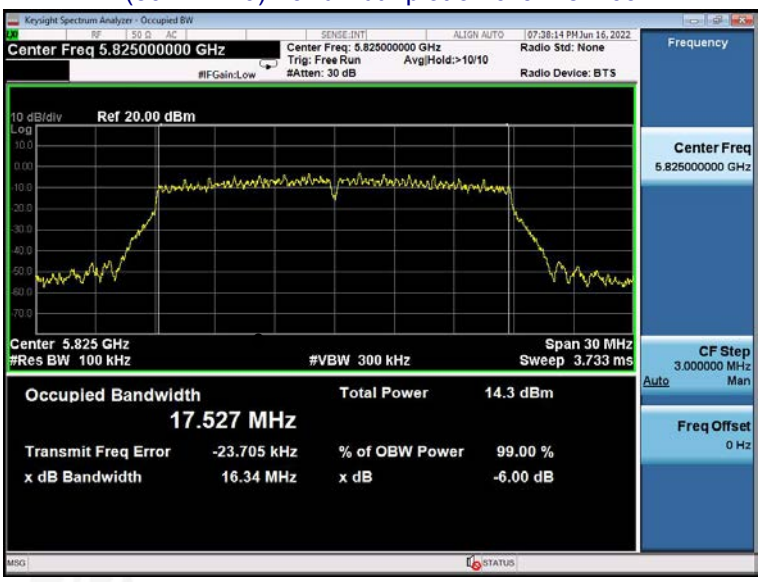
(802.11n20) Bandwidth plot on channel 149



(802.11n20) Bandwidth plot on channel 157



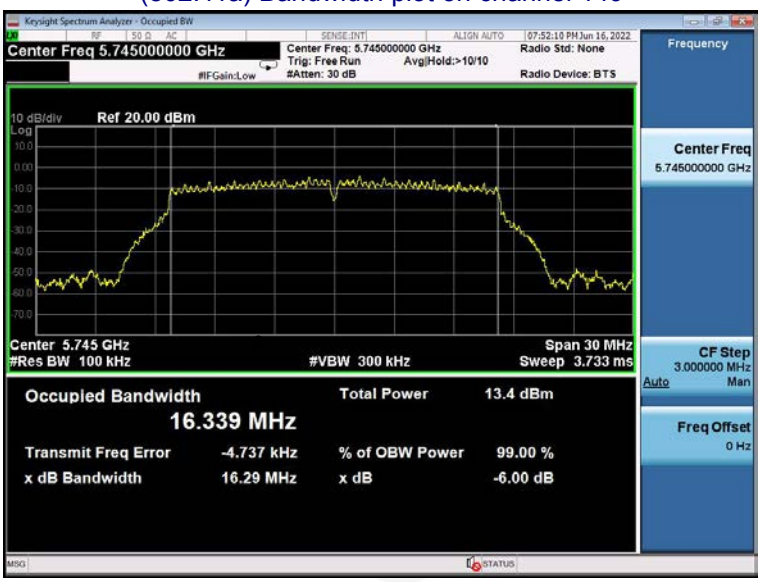
(802.11n20) Bandwidth plot on channel 165



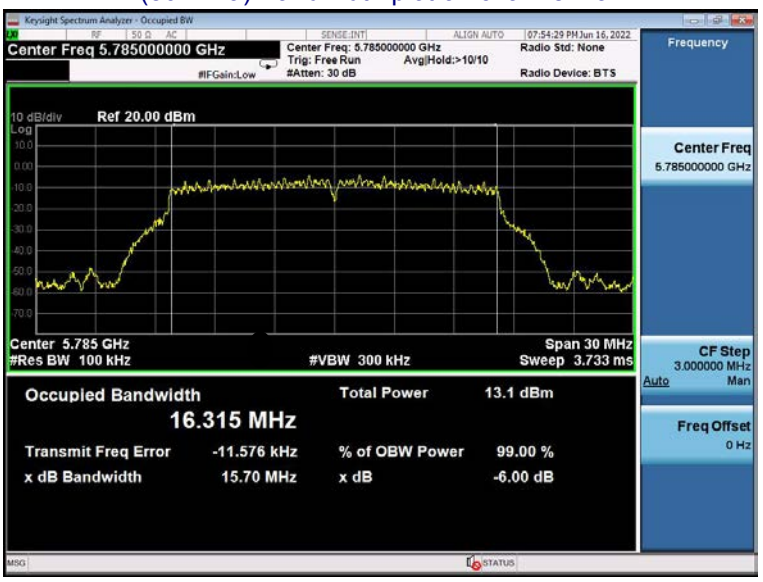
Ant B

Test plot

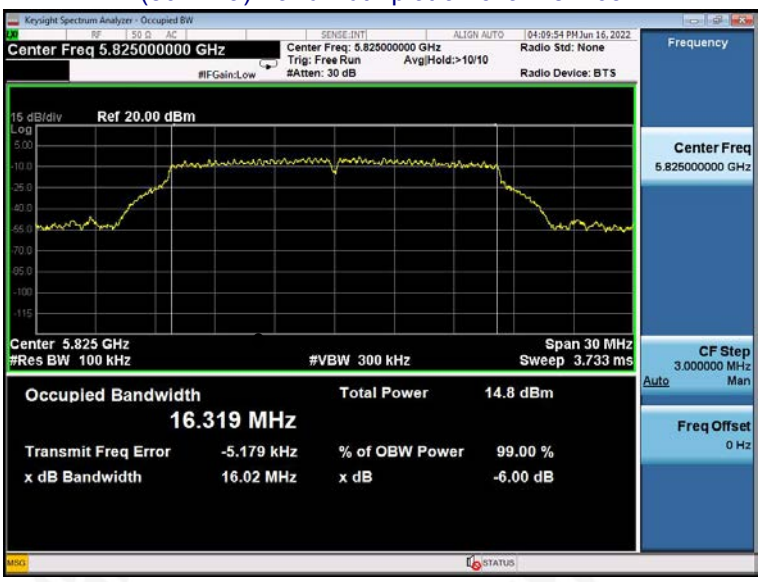
(802.11a) Bandwidth plot on channel 149



(802.11a) Bandwidth plot on channel 157

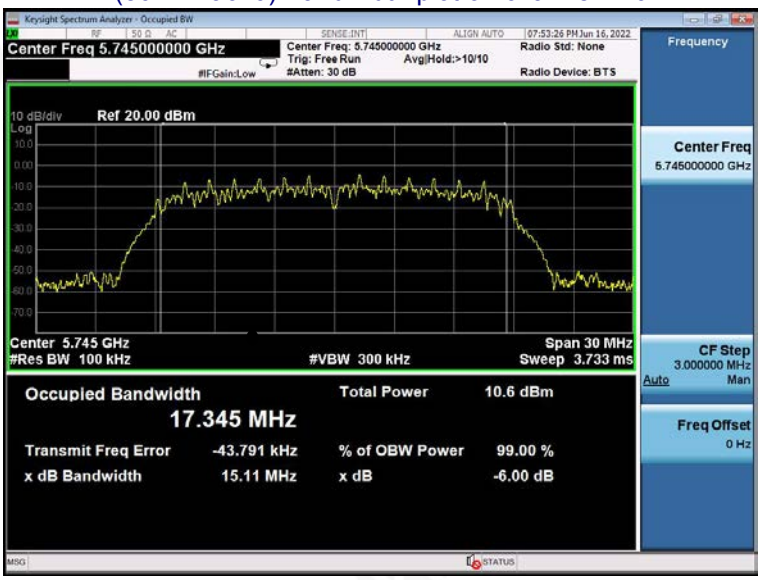


(802.11a) Bandwidth plot on channel 165

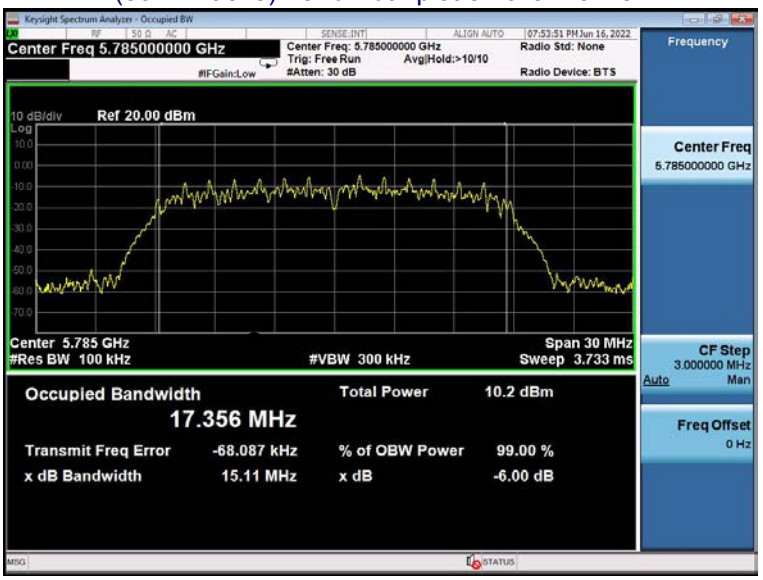


Test plot

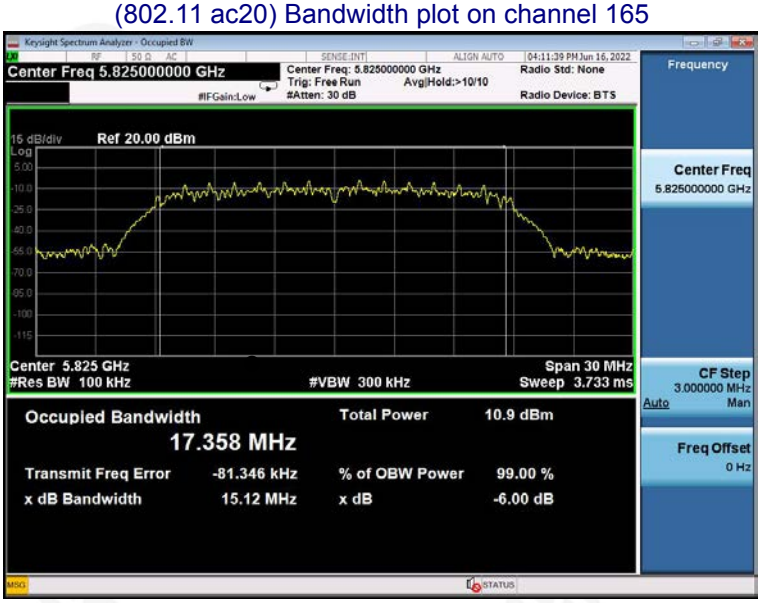
(802.11 ac20) Bandwidth plot on channel 149



(802.11 ac20) Bandwidth plot on channel 157

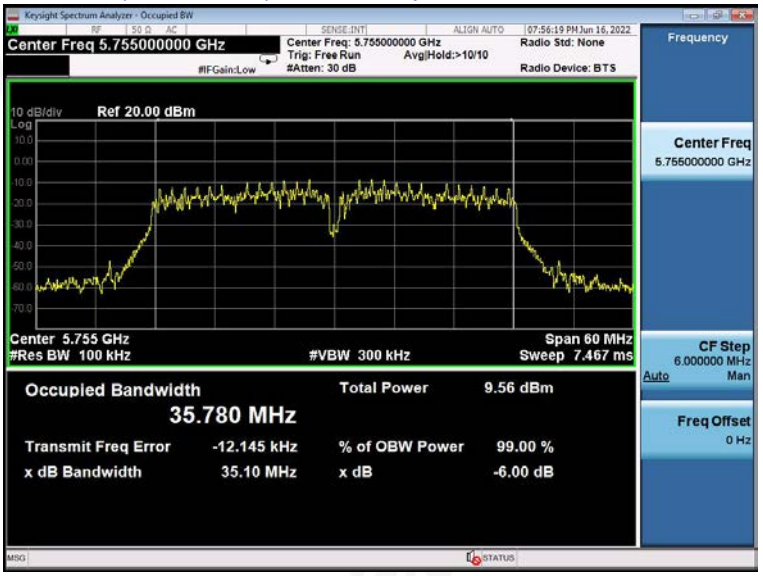


(802.11 ac20) Bandwidth plot on channel 165

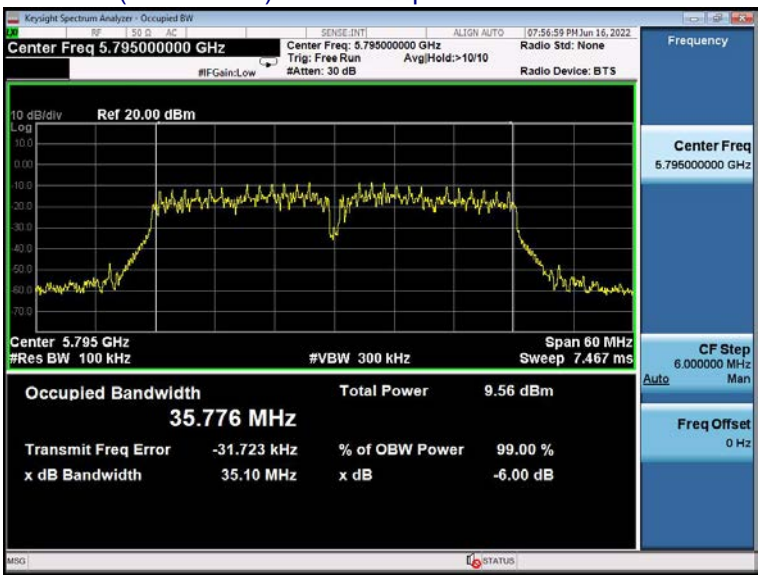


Test plot

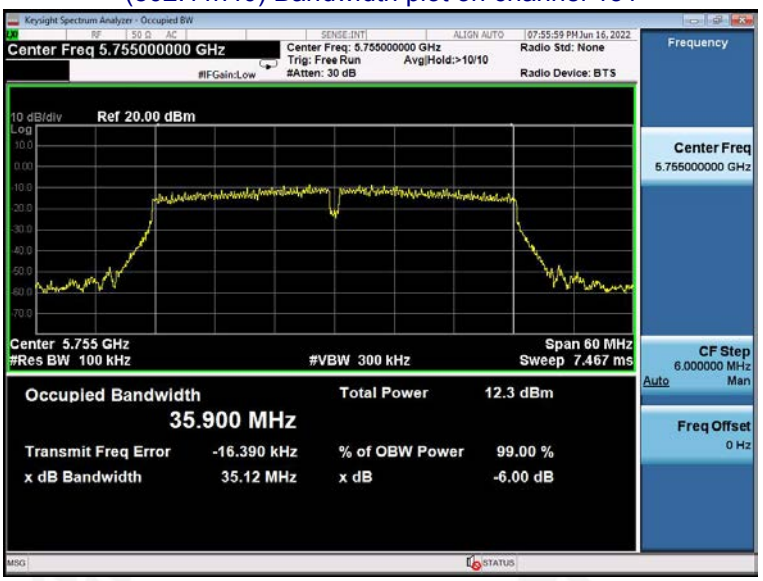
(802.11ac40) Bandwidth plot on channel 151



(802.11ac40) Bandwidth plot on channel 159

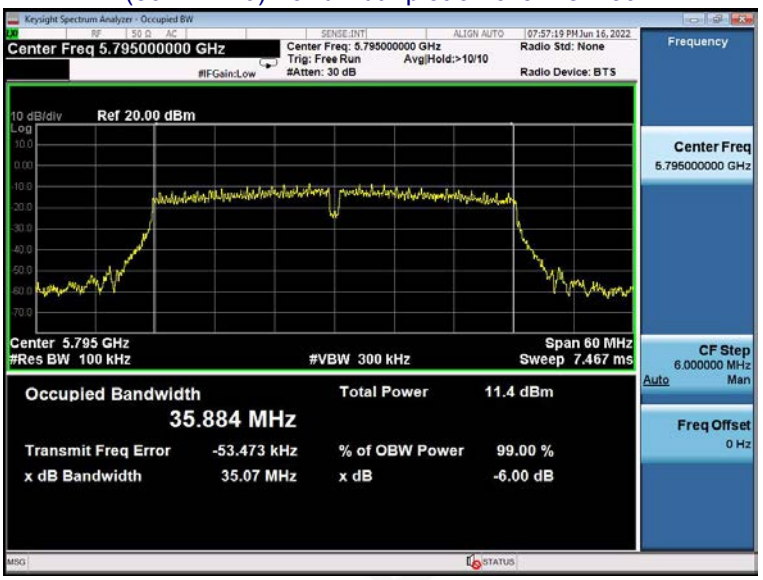


(802.11n40) Bandwidth plot on channel 151

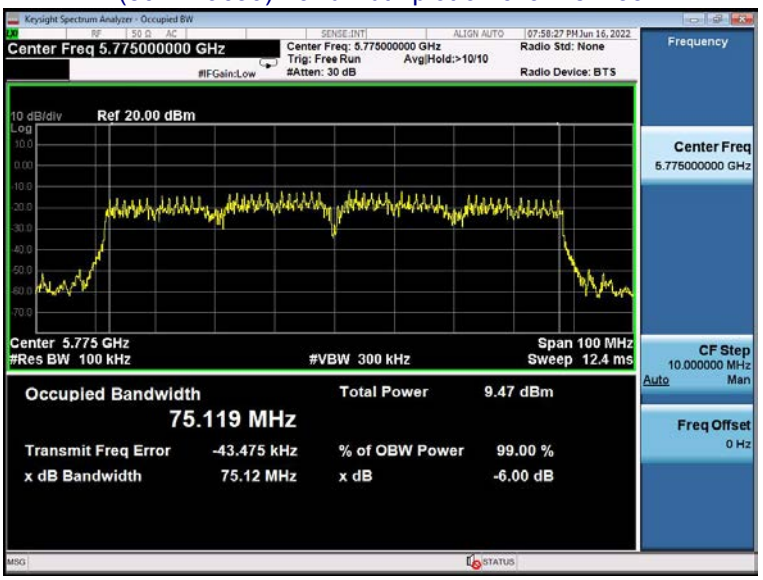


Test plot

(802.11n40) Bandwidth plot on channel 159



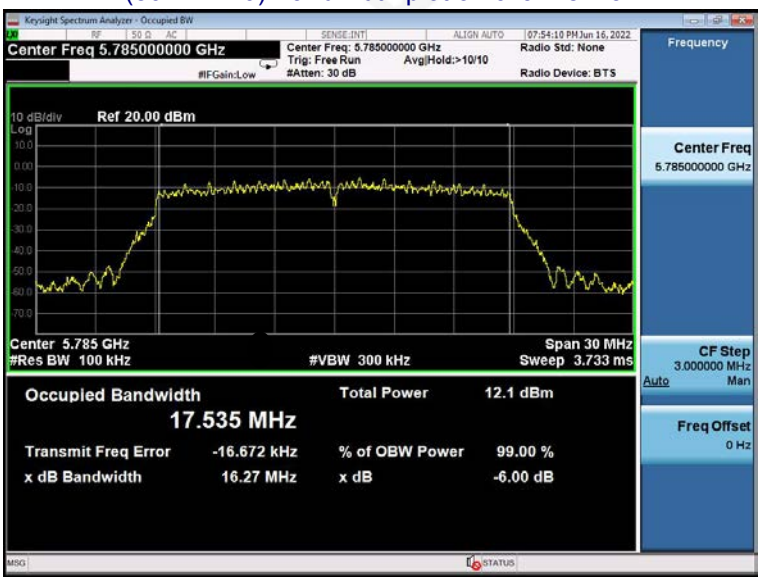
(802.11ac80) Bandwidth plot on channel 155



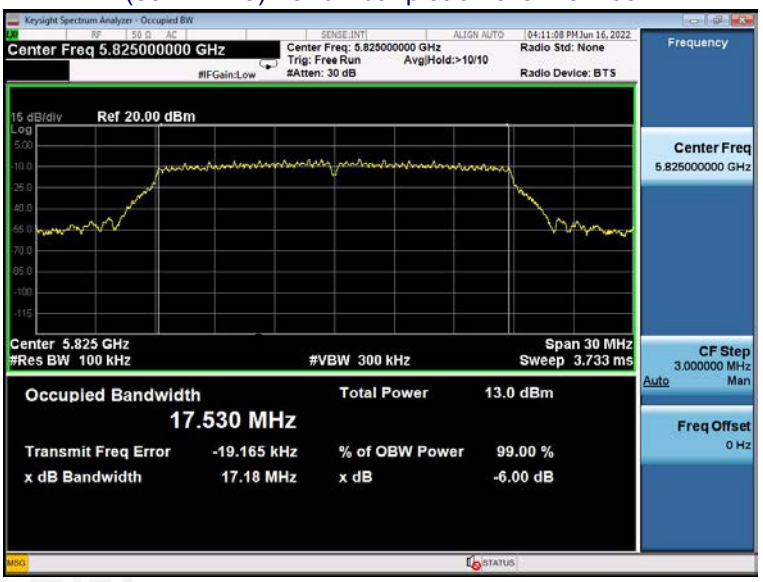
Test plot

(802.11n20) Bandwidth plot on channel 149

(802.11n20) Bandwidth plot on channel 157



(802.11n20) Bandwidth plot on channel 165



7.MAXIMUM CONDUCTED OUTPUT POWER

7.1 PPLIED PROCEDURES / LIMIT

According to FCC §15.407
The maximum conduced output power should not exceed:

Frequency Band(MHz)	Limit
5150~5250	250mW
5725~5850	1W

7.2 TEST PROCEDURE

The EUT was directly connected to the Power meter

1. Device Configuration
If possible, configure or modify the operation of the EUT so that it transmits continuously at its maximum power control level (see section II.B.).
a) The intent is to test at 100 percent duty cycle; however a small reduction in duty cycle (to no lower than 98 percent) is permitted if required by the EUT for amplitude control purposes. Manufacturers are expected to provide software to the test lab to permit such continuous operation.
b) If continuous transmission (or at least 98 percent duty cycle) cannot be achieved due to hardware limitations (e.g., overheating), the EUT shall be operated at its maximum power control level with the transmit duration as long as possible and the duty cycle as high as possible.

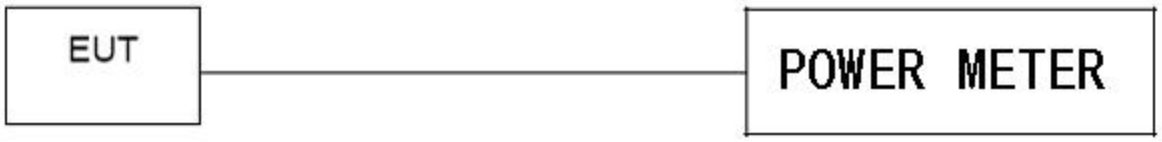
2. Measurement using a Spectrum Analyzer or EMI Receiver (SA)
Measurement of maximum conducted output power using a spectrum analyzer requires integrating the spectrum across a frequency span that encompasses, at a minimum, either the EBW or the 99-percent occupied bandwidth of the signal.1 However, the EBW must be used to determine bandwidth dependent limits on maximum conducted output power in accordance with § 15.407(a).
a) The test method shall be selected as follows: (i) Method SA-1 or SA-1 Alternative (averaging with the EUT transmitting at full power throughout each sweep) shall be applied if either of the following conditions can be satisfied:
• The EUT transmits continuously (or with a duty cycle ≥ 98 percent).
• Sweep triggering or gating can be implemented in a way that the device transmits at the maximum power control level throughout the duration of each of the instrument sweeps to be averaged. This condition can generally be achieved by triggering the instrument's sweep if the duration of the sweep (with the analyzer configured as in Method SA-1, below) is equal to or shorter than the duration T of each transmission from the EUT and if those transmissions exhibit full power throughout their durations.
(ii) Method SA-2 or SA-2 Alternative (averaging across on and off times of the EUT transmissions, followed by duty cycle correction) shall be applied if the conditions of (i) cannot be achieved and the transmissions exhibit a constant duty cycle during the measurement duration. Duty cycle will be considered to be constant if variations are less than ± 2 percent.
(iii) Method SA-3 (RMS detection with max hold) or SA-3 Alternative (reduced VBW with max hold) shall be applied if the conditions of (i) and (ii) cannot be achieved.
b) Method SA-1 (trace averaging with the EUT transmitting at full power throughout each sweep): (i) Set span to encompass the entire emission bandwidth (EBW) (or, alternatively, the entire 99% occupied bandwidth) of the signal.
(ii) Set RBW = 1 MHz.
(iii) Set VBW ≥ 3 MHz.
(iv) Number of points in sweep ≥ 2 Span / RBW. (This ensures that bin-to-bin spacing is ≤ RBW/2, so that narrowband signals are not lost between frequency bins.)
(v) Sweep time = auto.
(vi) Detector = RMS (i.e., power averaging), if available. Otherwise, use sample detector mode.
(vii) If transmit duty cycle < 98 percent, use a video trigger with the trigger level set to enable triggering only on full power pulses. Transmitter must operate at maximum power control level for the entire duration of every sweep. If the EUT transmits continuously (i.e., with no off intervals) or at duty cycle ≥ 98 percent, and if each transmission is entirely at the maximum power control level, then the trigger shall be set to "free run".
(viii) Trace average at least 100 traces in power averaging (i.e., RMS) mode.

(ix) Compute power by integrating the spectrum across the EBW (or, alternatively, the entire 99% occupied bandwidth) of the signal using the instrument's band power measurement function with band limits set equal to the EBW (or occupied bandwidth) band edges. If the instrument does not have a band power function, sum the spectrum

7.3 DEVIATION FROM STANDARD

No deviation.

7.4 TEST SETUP



7.5 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 2.4 Unless otherwise a special operating condition is specified in the follows during the testing.

7.6 TEST RESULTS

Temperature :	26 ℃	Relative Humidity :	54%
Pressure :	1012 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX		

Type	Frequency (MHz)	Maximum output power(dBm)		Total Output Power(dBm)	FCC Limit (dBm)	Result
		ANT A	ANT B			
802.11a	5180	17.89	18.27	/	23.98	Pass
	5200	18.23	18.69	/	23.98	Pass
	5240	17.82	18.19	/	23.98	Pass
802.11ac (20M)	5180	15.36	15.63	18.51	22.97	Pass
	5200	14.33	14.48	17.42	22.97	Pass
	5240	14.66	14.82	17.75	22.97	Pass
802.11ac (40M)	5190	13.74	13.93	16.85	22.97	Pass
	5230	13.89	14.03	16.97	22.97	Pass
802.11ac (80M)	5210	13.87	14.14	17.02	22.97	Pass
802.11n (40M)	5190	13.75	13.93	16.85	22.97	Pass
	5230	14.04	14.26	17.16	22.97	Pass
802.11n (20M)	5180	15.26	15.63	18.46	22.97	Pass
	5200	15.17	15.46	18.33	22.97	Pass
	5240	15.14	15.39	18.28	22.97	Pass

Type	Frequency (MHz)	Maximum output power(dBm)		Total Output Power(dBm)	FCC Limit (dBm)	Result
		ANT A	ANT B			
802.11a	5745	19.25	19.73	/	30.00	Pass
	5785	18.71	18.93	/	30.00	Pass
	5825	18.69	18.89	/	30.00	Pass
802.11ac (20M)	5745	14.01	15.43	17.79	28.99	Pass
	5785	14.89	15.14	18.03	28.99	Pass
	5825	14.67	15.05	17.87	28.99	Pass
802.11ac (40M)	5755	14.47	14.83	17.66	28.99	Pass
	5795	14.04	14.53	17.30	28.99	Pass
802.11ac (80M)	5775	13.51	13.86	16.70	28.99	Pass
802.11n (40M)	5755	15.71	16.11	18.92	28.99	Pass
	5795	15.97	16.34	19.17	28.99	Pass
802.11n (20M)	5745	16.39	16.63	19.52	28.99	Pass
	5785	16.24	16.51	19.39	28.99	Pass
	5825	16.30	16.59	19.46	28.99	Pass

8.OUT OF BAND EMISSIONS

8.1 APPLICABLE STANDARD

According to FCC §15.407(b)

Undesirable emission limits. Except as shown in paragraph (b)(7) of this section, the maximum emissions outside of the frequency bands of operation shall be attenuated in accordance with the following limits:

(1) For transmitters operating in the 5.15-5.25 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz.

(2) For transmitters operating in the 5.725-5.85 GHz band: All emissions within the frequency range from the band edge to 10 MHz above or below the band edge shall not exceed an e.i.r.p. of −17 dBm/MHz; for frequencies 10 MHz or greater above or below the band edge, emissions shall not exceed an e.i.r.p. of −27 dBm/MHz.

8.2 TEST PROCEDURE

1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal froman external generator.
2. Position the EUT without connection to measurement instrument. Turn on the EUT and connect its antennaterminal to measurement instrument via a low loss cable. Then set it to any one measured frequency withinits operating range, and make sure the instrument is operated in its linear range.
3. Set RBW of spectrum analyzer to 1 MHz with a convenient frequency span.
4. Measure the highest amplitude appearing on spectral display and set it as a reference level. Plot the graphwith marking the highest point and edge frequency.
5. Repeat above procedures until all measured frequencies were complete.

8.3 DEVIATION FROM STANDARD

No deviation.

8.4 TEST SETUP

8.5 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 2.4 Unless otherwise a special operating condition is specified in the follows during the testing.

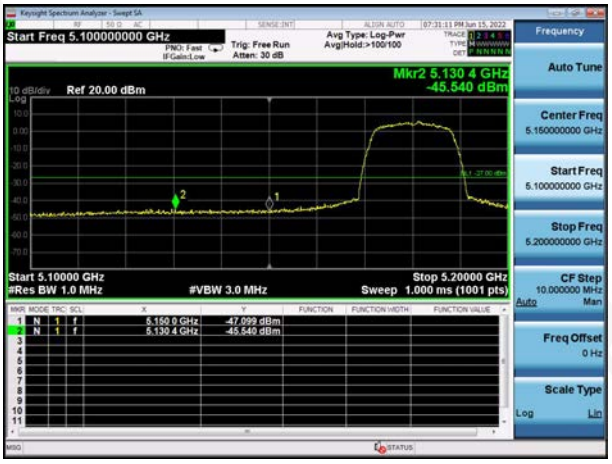
8.6 TEST RESULTS

Temperature：	26 ℃	Relative Humidity：	54%
Pressure：	1012 hPa	Test Voltage ：	AC 120V/60Hz

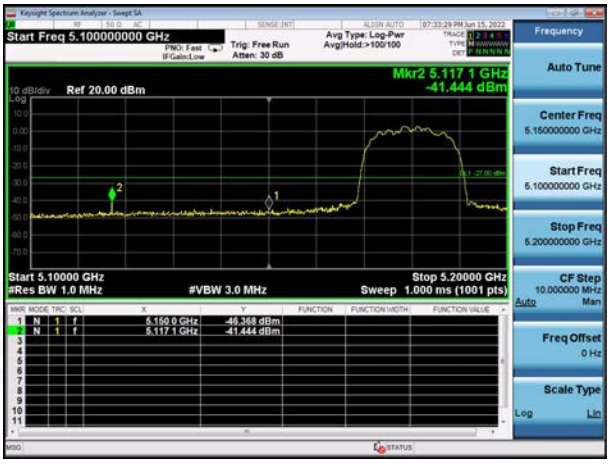
Ant A

5.180~5.240 GHz

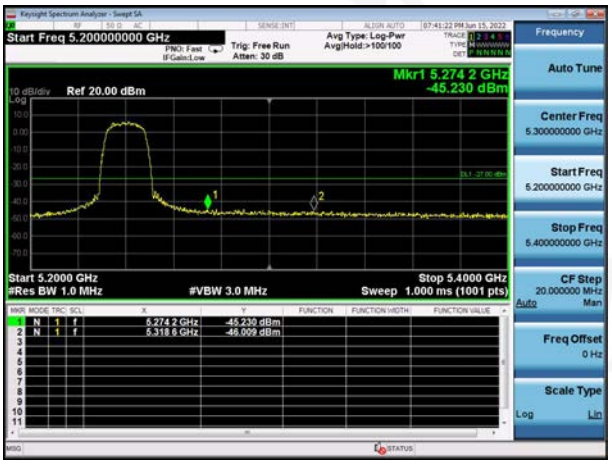
(802.11a) Band Edge, Left Side



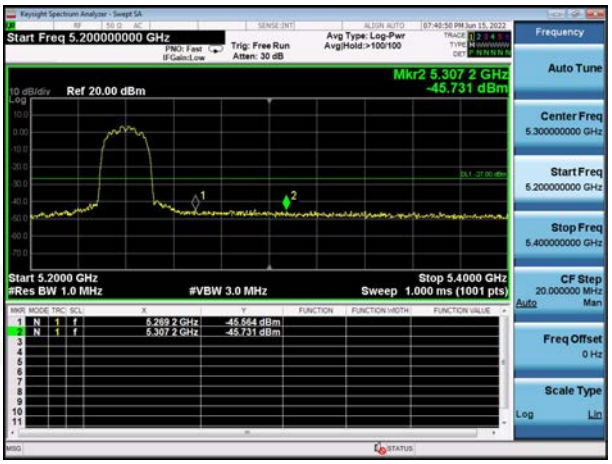
(802.11ac20) Band Edge, Left Side



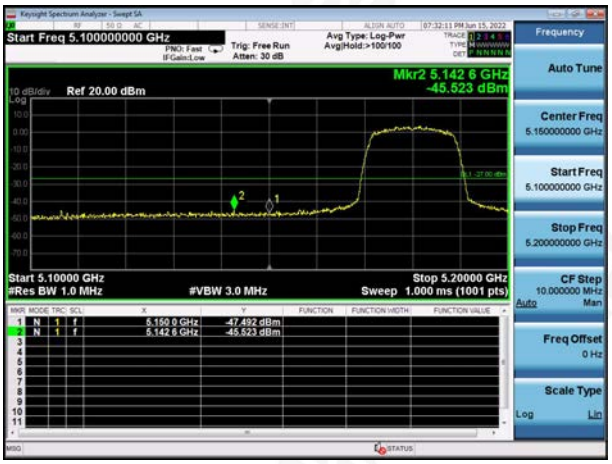
(802.11a) Band Edge, Right Side



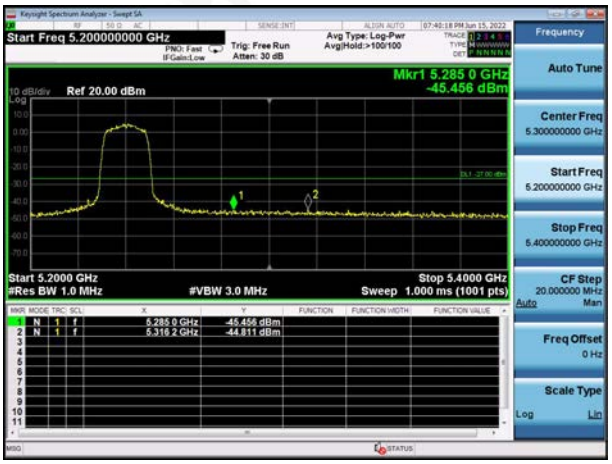
(802.11ac20) Band Edge, Right Side



(802.11n20) Band Edge, Left Side

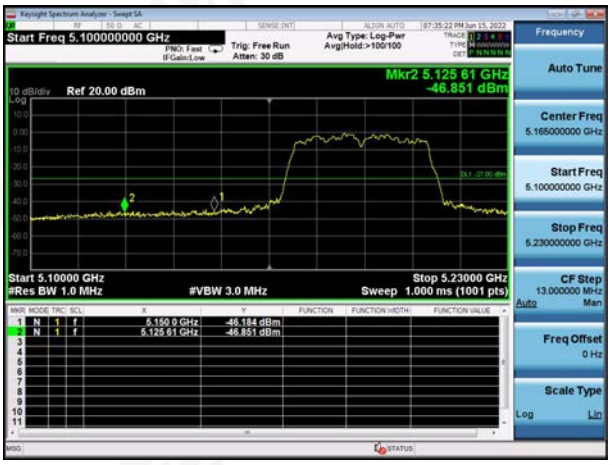


(802.11n20) Band Edge, Right Side

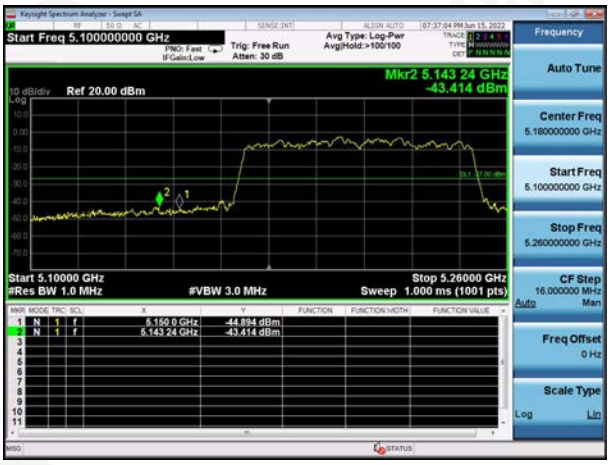


5.180~5.240 GHz

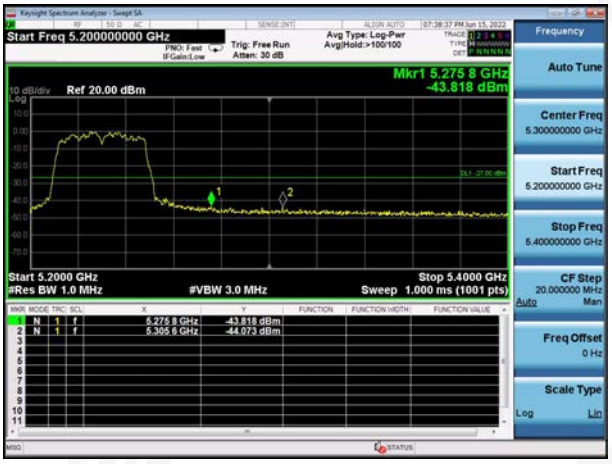
(802.11ac40) Band Edge, Left Side



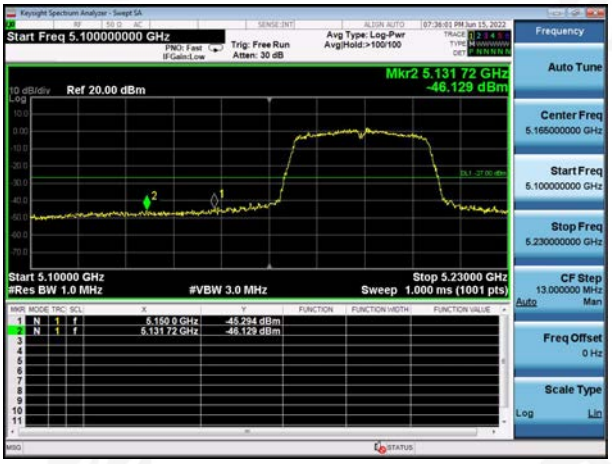
(802.11ac80) Band Edge



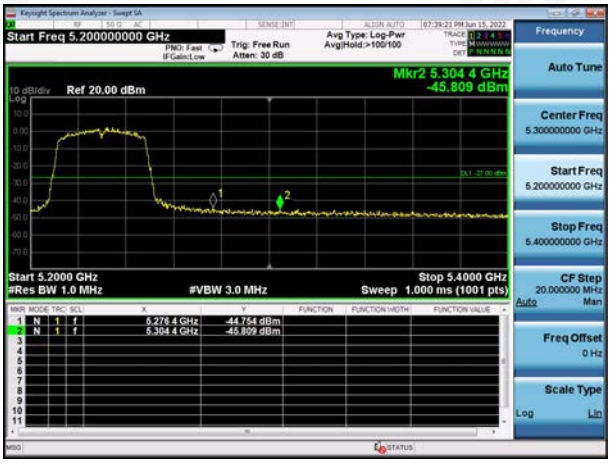
(802.11ac40) Band Edge, Right Side



(802.11n40) Band Edge, Left Side



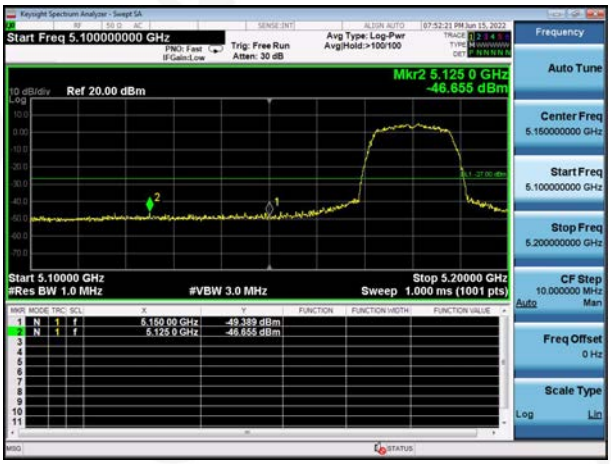
(802.11n40) Band Edge, Right Side



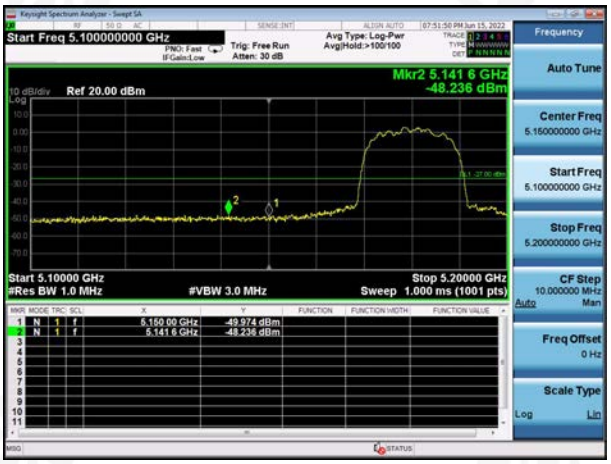
Ant B

5.180~5.240 GHz

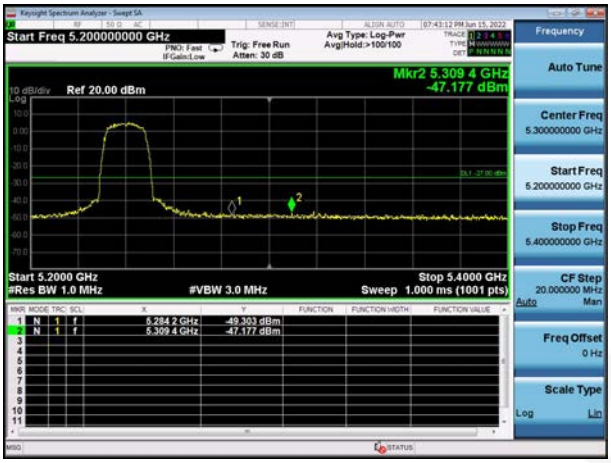
(802.11a) Band Edge, Left Side



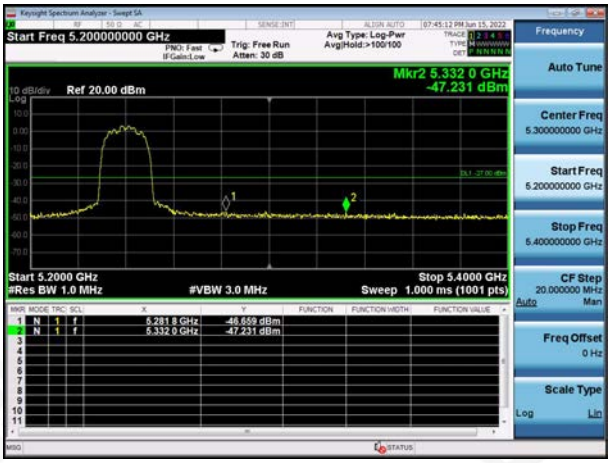
(802.11ac20) Band Edge, Left Side



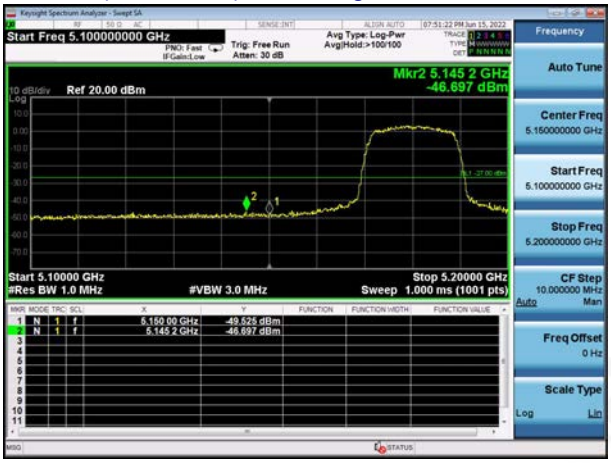
(802.11a) Band Edge, Right Side



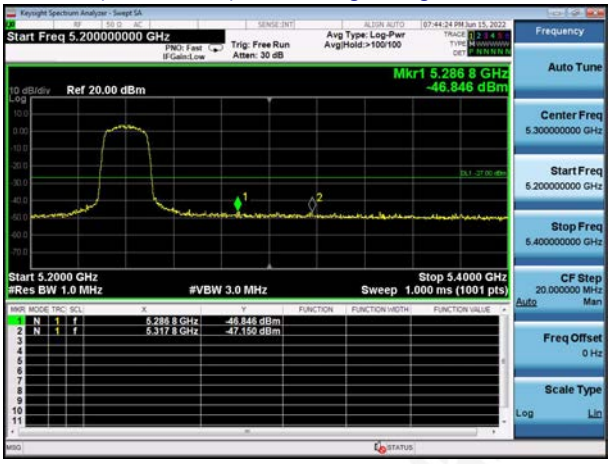
(802.11ac20) Band Edge, Right Side



(802.11n20) Band Edge, Left Side

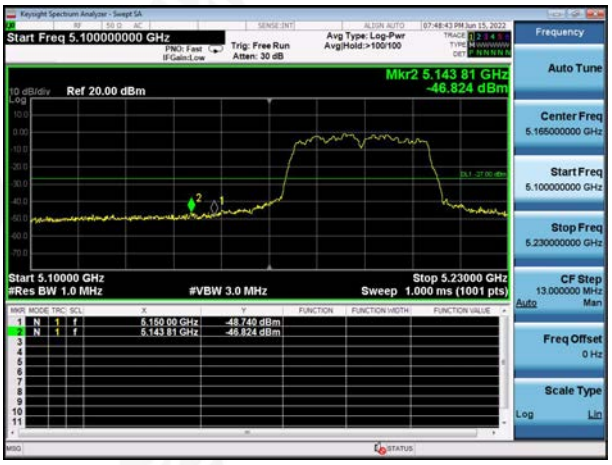


(802.11n20) Band Edge, Right Side

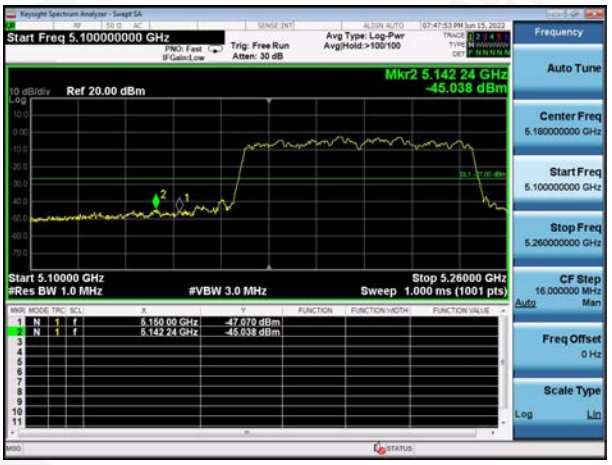


5.180~5.240 GHz

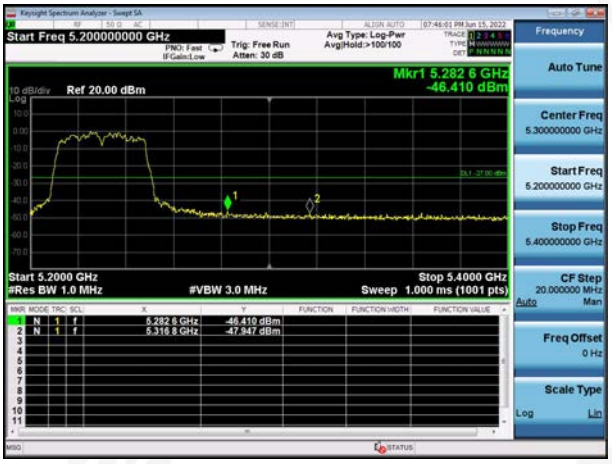
(802.11ac40) Band Edge, Left Side



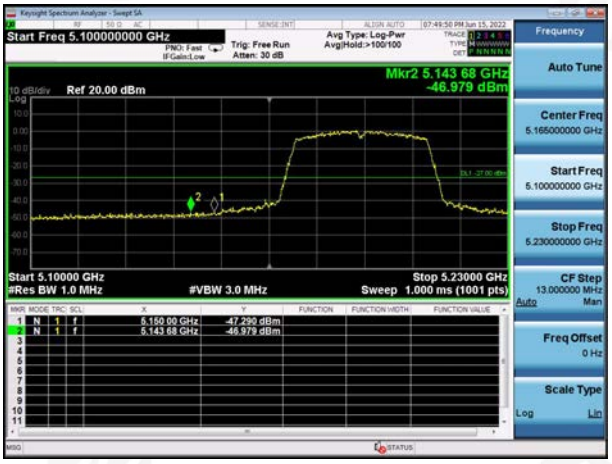
(802.11ac80) Band Edge



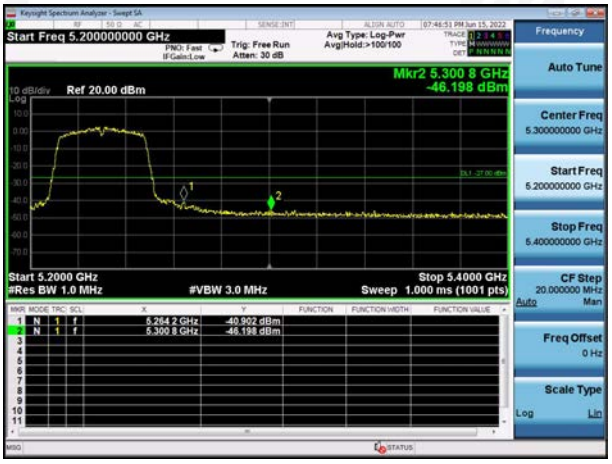
(802.11ac40) Band Edge, Right Side



(802.11n40) Band Edge, Left Side



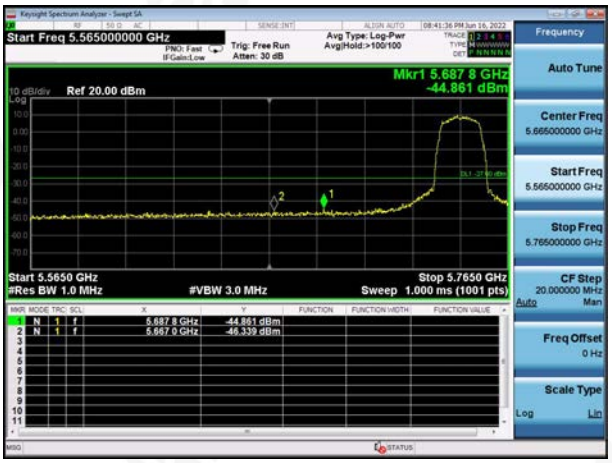
(802.11n40) Band Edge, Right Side



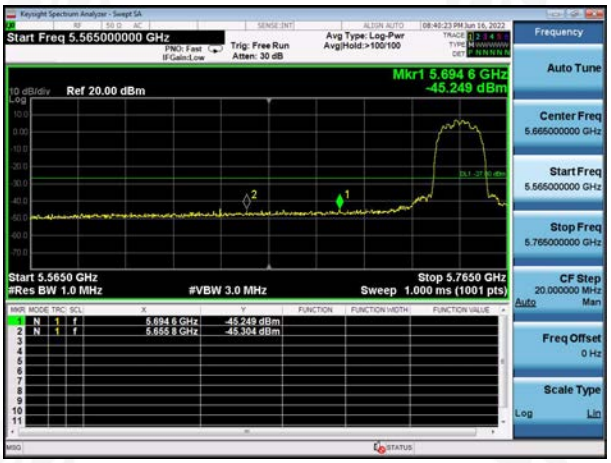
Ant A

5.745~5.825 GHz

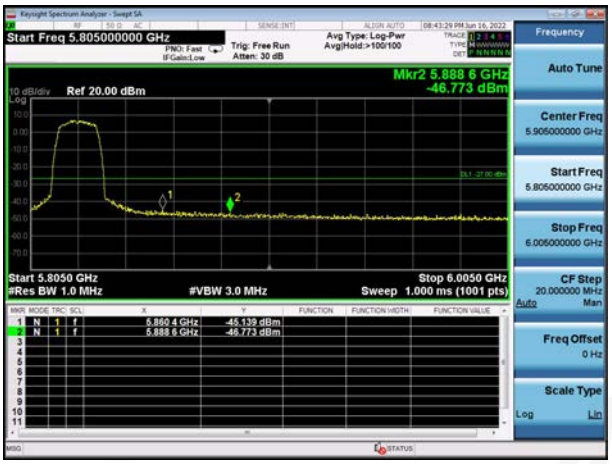
(802.11a) Band Edge, Left Side



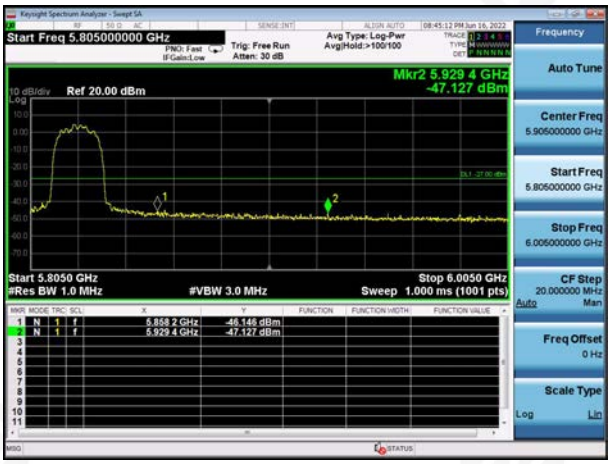
(802.11ac20) Band Edge, Left Side



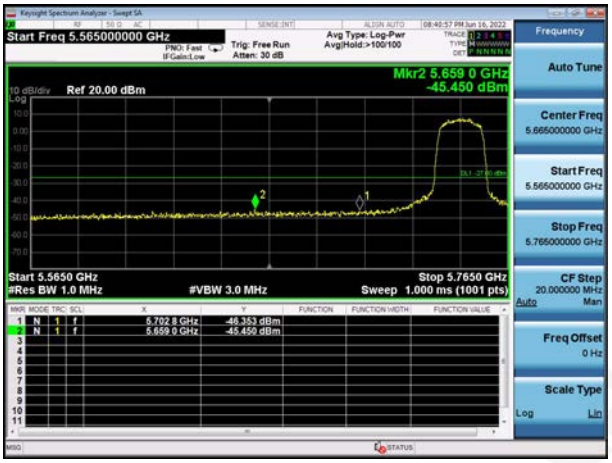
(802.11a) Band Edge, Right Side



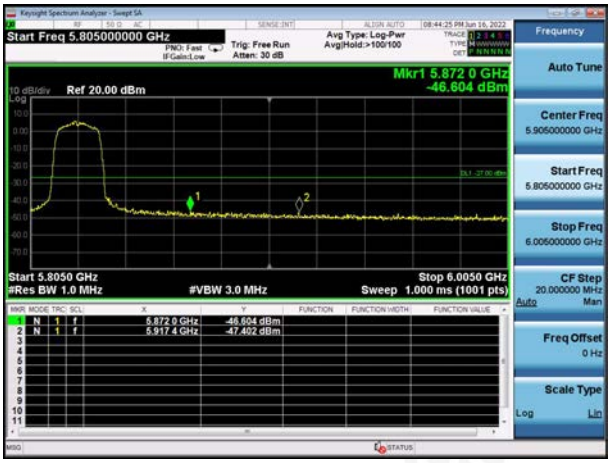
(802.11ac20) Band Edge, Right Side



(802.11n20) Band Edge, Left Side

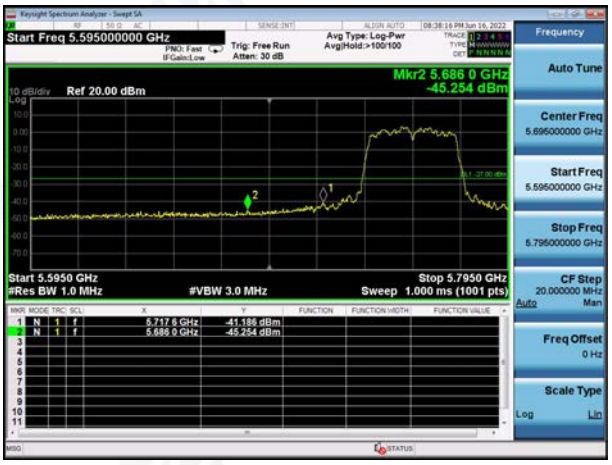


(802.11n20) Band Edge, Right Side



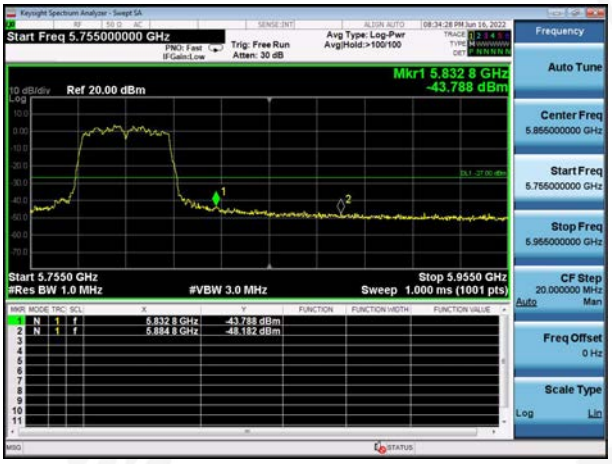
5.745~5.825 GHz

(802.11ac40) Band Edge, Left Side

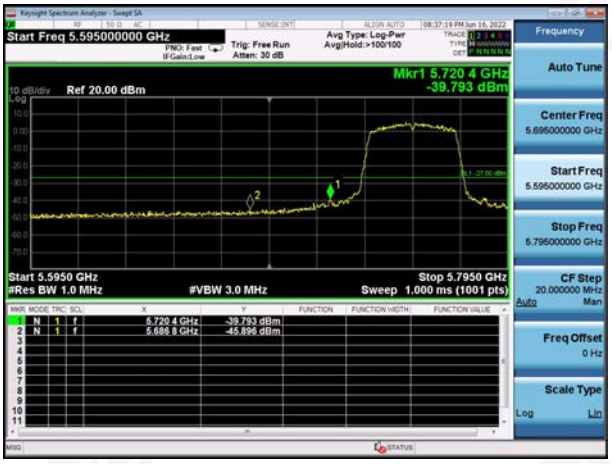


(802.11ac80) Band Edge

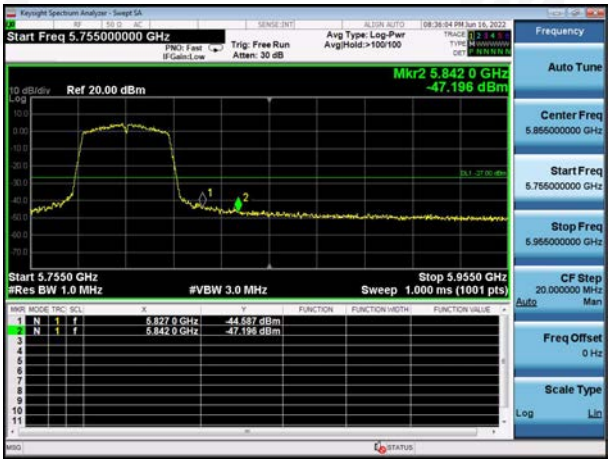
(802.11ac40) Band Edge, Right Side



(802.11n40) Band Edge, Left Side



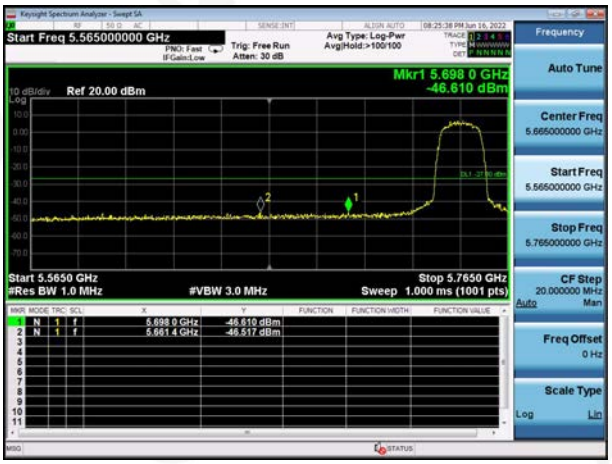
(802.11n40) Band Edge, Right Side



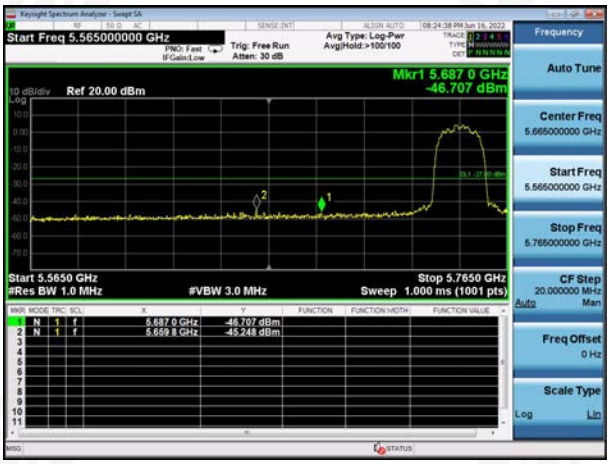
Ant B

5.745~5.825 GHz

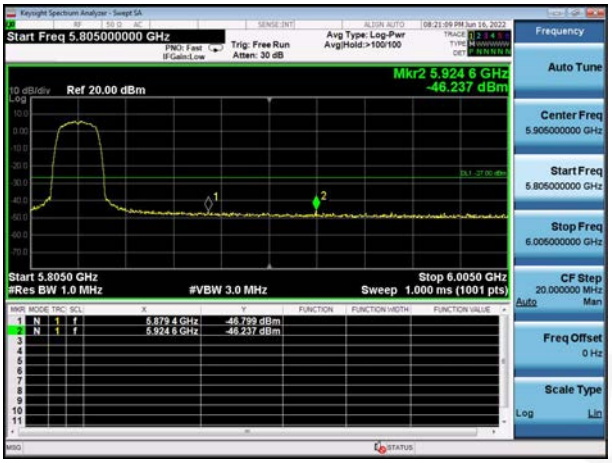
(802.11a) Band Edge, Left Side



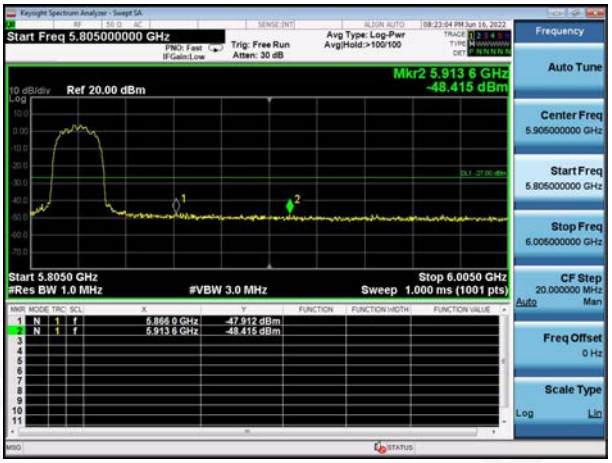
(802.11ac20) Band Edge, Left Side



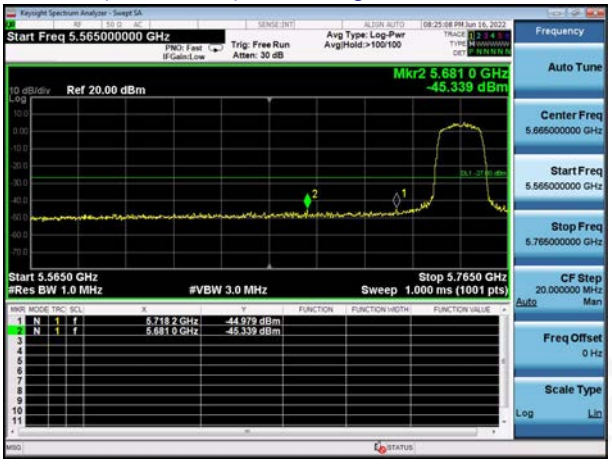
(802.11a) Band Edge, Right Side



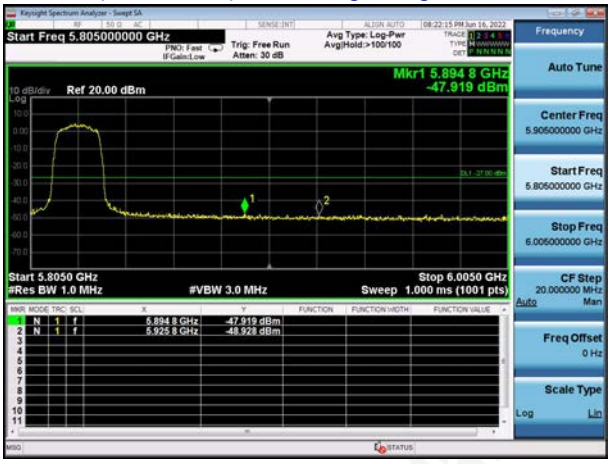
(802.11ac20) Band Edge, Right Side



(802.11n20) Band Edge, Left Side

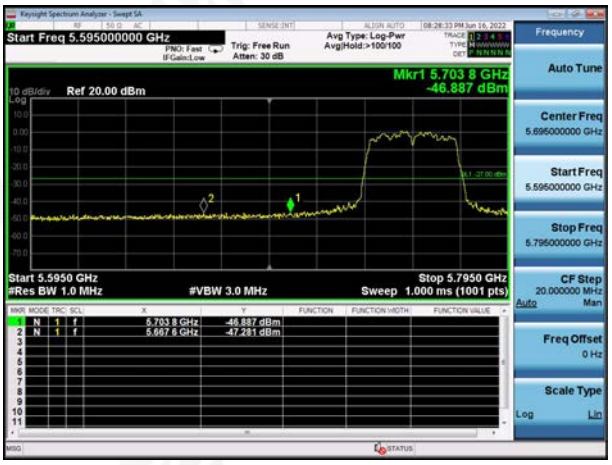


(802.11n20) Band Edge, Right Side

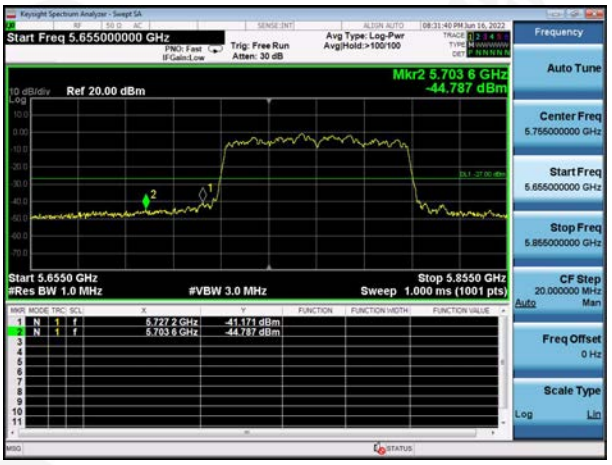


5.745~5.825 GHz

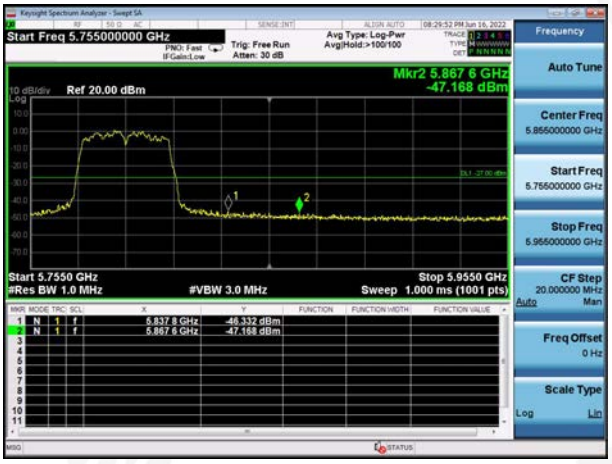
(802.11ac40) Band Edge, Left Side



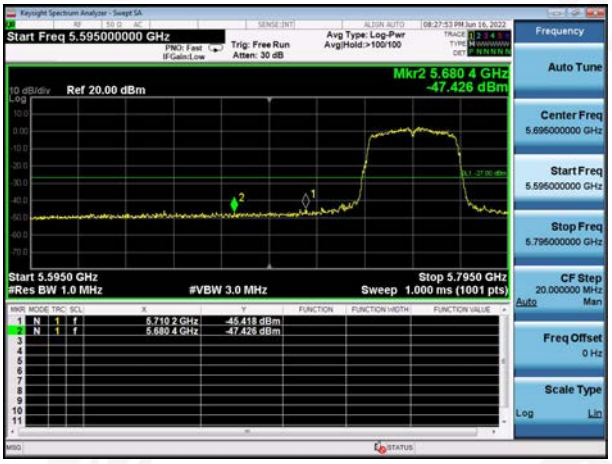
(802.11ac80) Band Edge



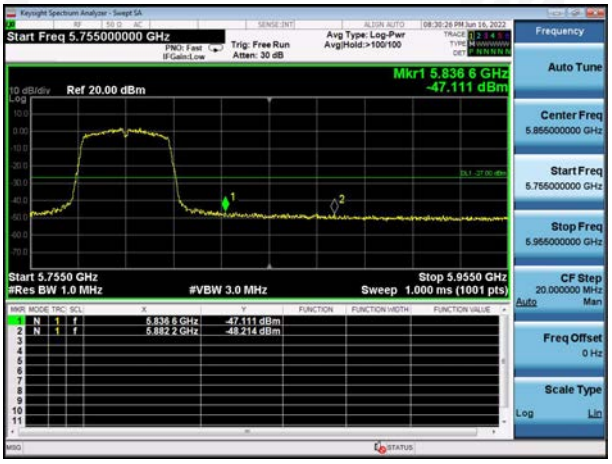
(802.11ac40) Band Edge, Right Side



(802.11n40) Band Edge, Left Side



(802.11n40) Band Edge, Right Side



9.SPURIOUS RF CONDUCTED EMISSIONS

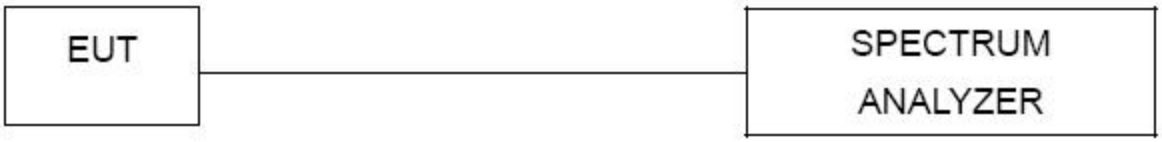
9.1 CONFORMANCE LIMIT

1. Below -20dB of the highest emission level in operating band.
2. Fall in the restricted bands listed in section 15.205. The maximum permitted average field strength is listedin section 15.209.

9.2 MEASURING INSTRUMENTS

The Measuring equipment is listed in the section 6.3 of this test report.

9.3 TEST SETUP



9.4 TEST PROCEDURE

The Spurious RF conducted emissions compliance of RF radiated emission should be measured by following the guidance in ANSI C63.10-2013 with respect to maximizing the emission by rotating the EUT, measuring the emission while the EUT is situated in three orthogonal planes (if appropriate), adjusting the measurement antenna height and polarization etc. Set RBW=100kHz and VBW= 300KHz to measure the peak field strength, and measure frequency range from 30MHz to 26.5GHz.

9.5 TEST RESULTS

Remark: The measurement frequency range is from 30MHz to the 5th harmonic of the fundamental frequency. The lowest, middle and highest channels are tested to verify the spurious emissions and bandedge measurement data.

Test plot as follows:

Remark: Spurious Emission all modes of 802.11a, 802.11ac20, 802.11ac40, 802.11ac80, 802.11n40 were tested, only the worst result of 802.11b

5.180~5.240 GHz

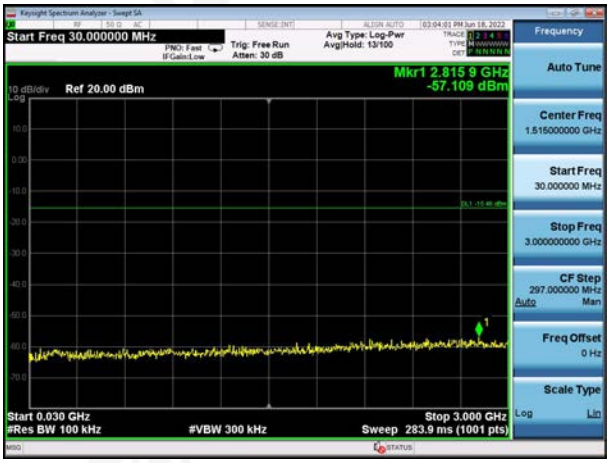
802.11a

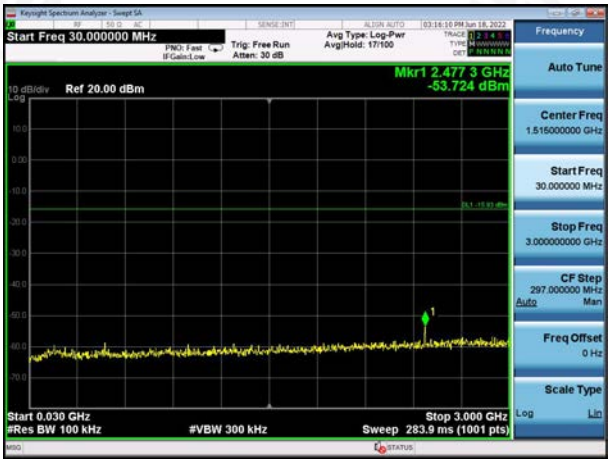
Lowest channel

Ant A

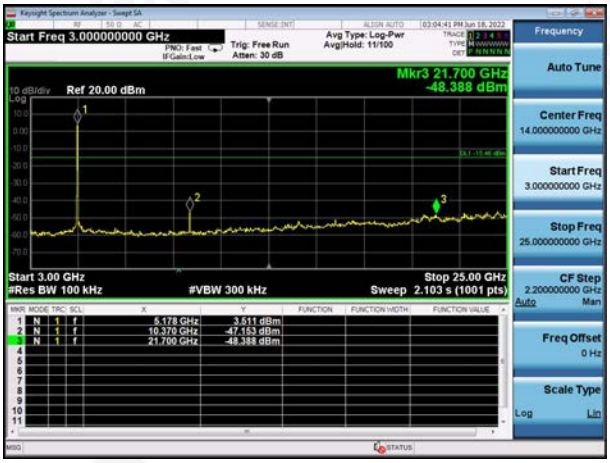
Ant B

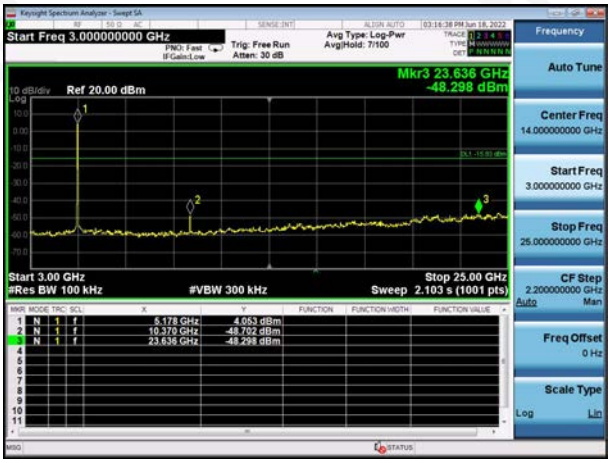
CH01





30MHz~3GHz





3GHz~25GHz

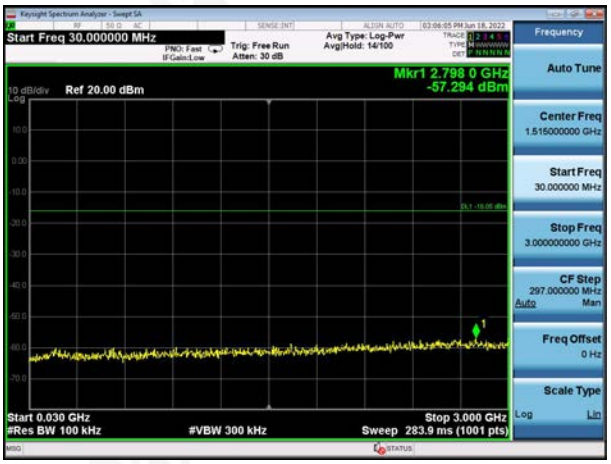
802.11a

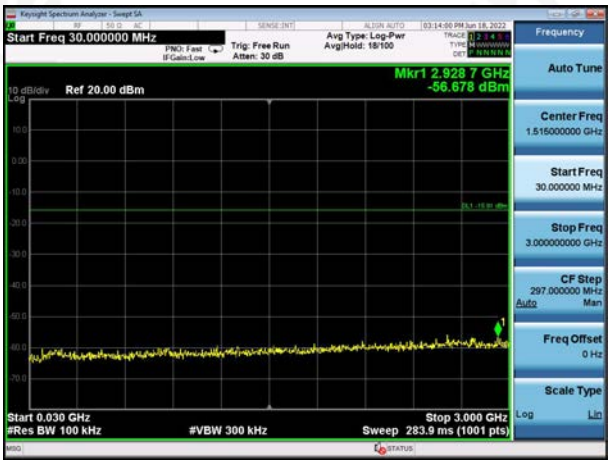
Middle channel

Ant A

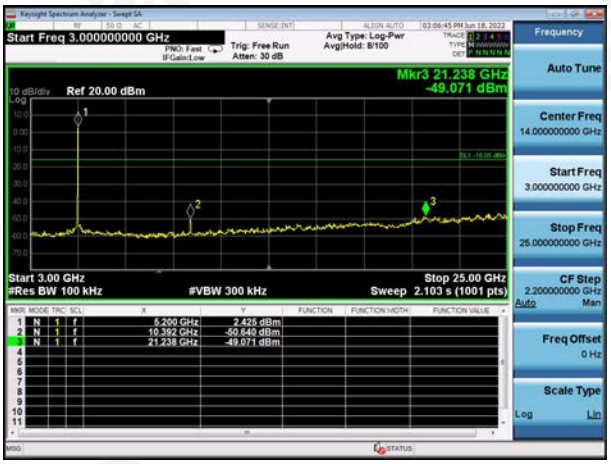
Ant B

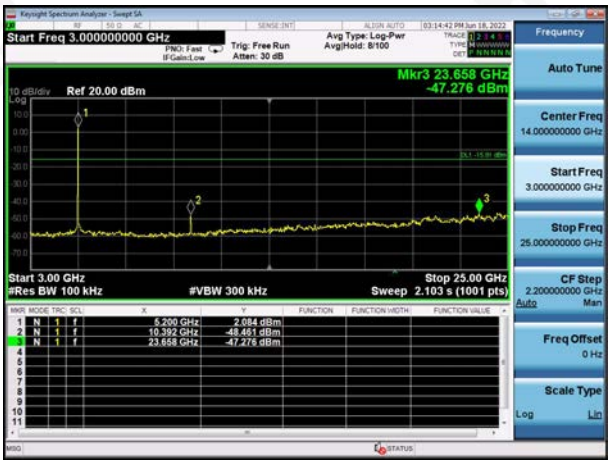
CH06





30MHz~3GHz



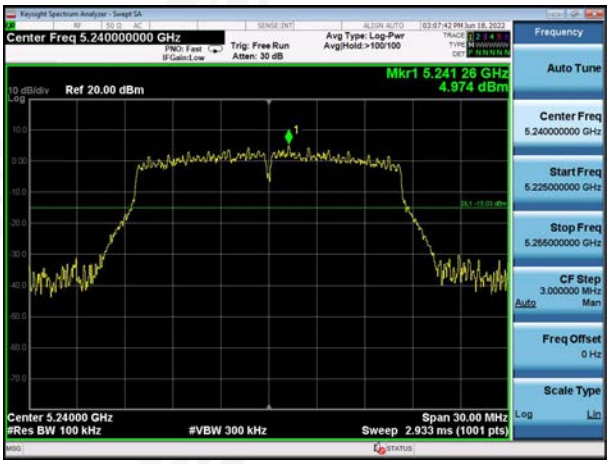


3GHz~25GHz

802.11a

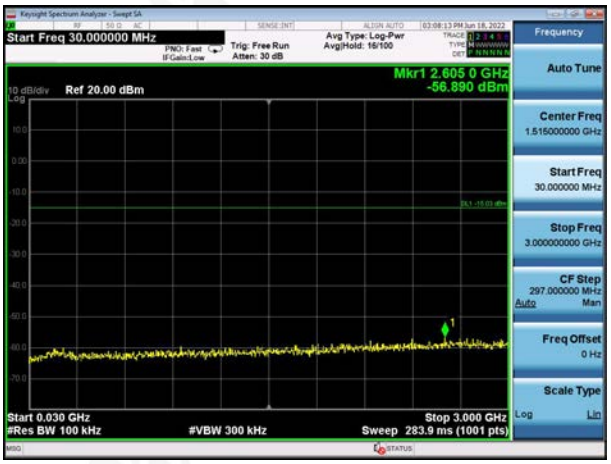
Highest channel

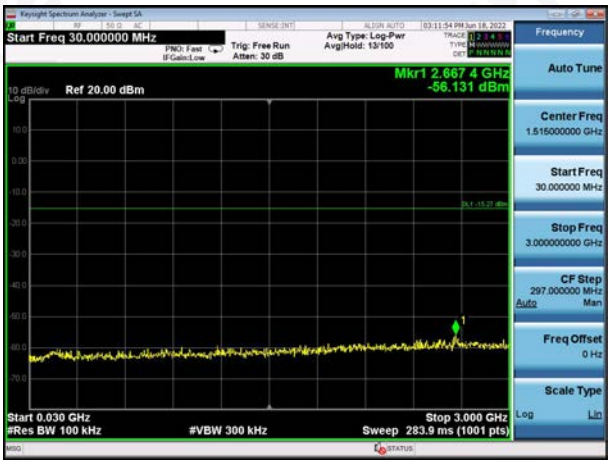
Ant A



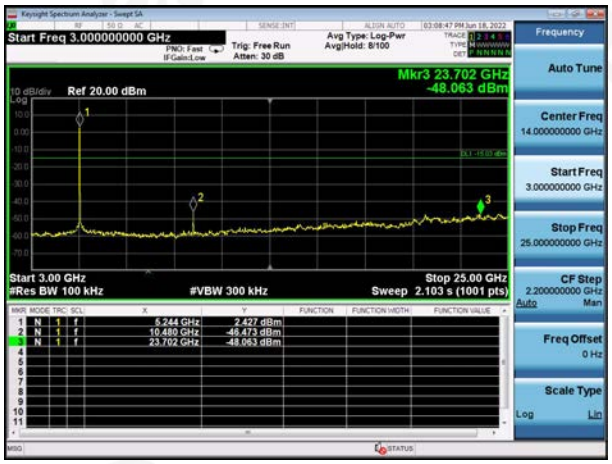
Ant B

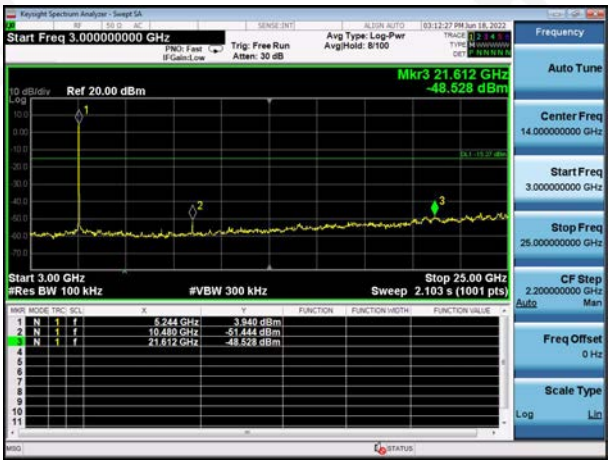
CH06





30MHz~3GHz





3GHz~25GHz

5.745~5.825 GHz

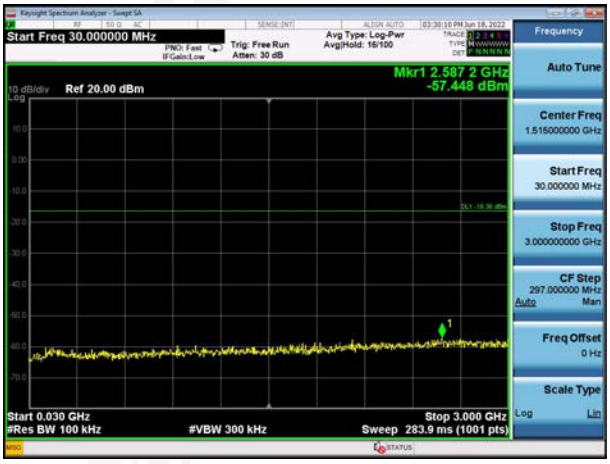
802.11a

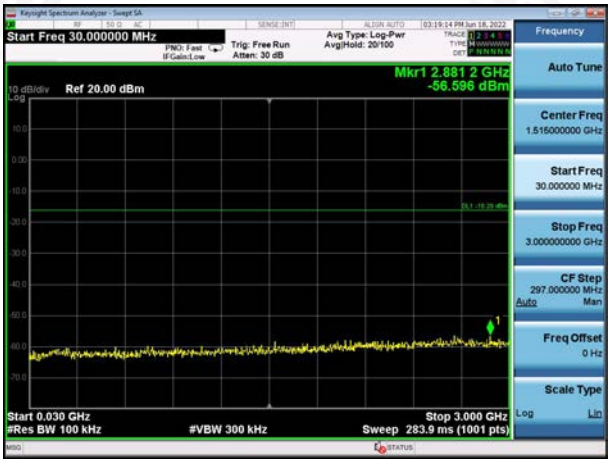
Lowest channel

Ant A

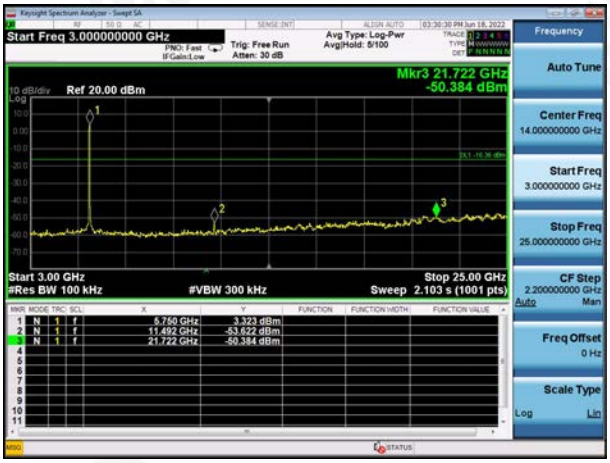
Ant B

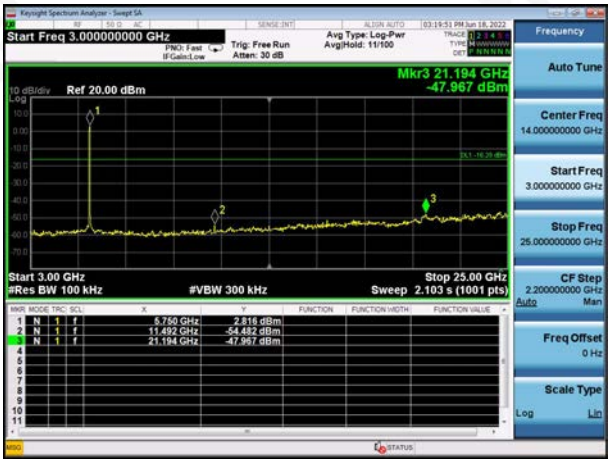
CH01





30MHz~3GHz





3GHz~25GHz

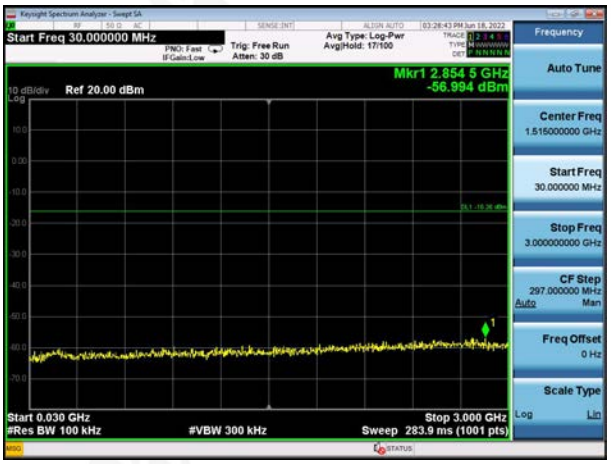
802.11a

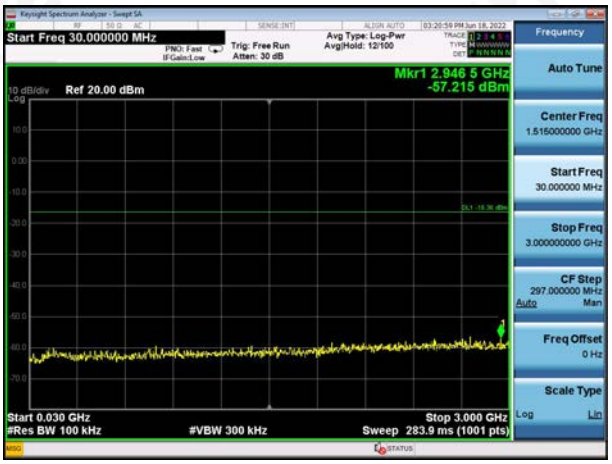
Middle channel

Ant A

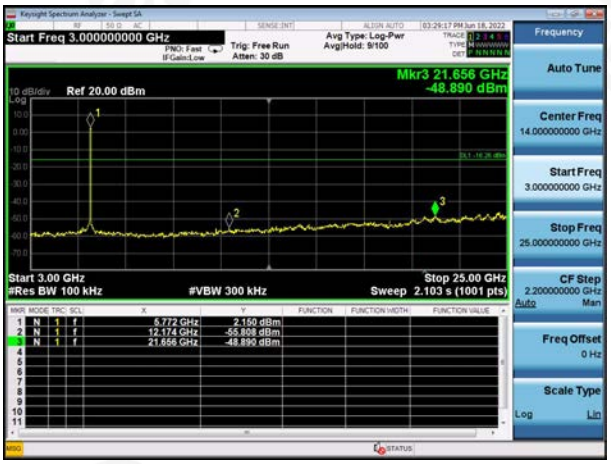
Ant B

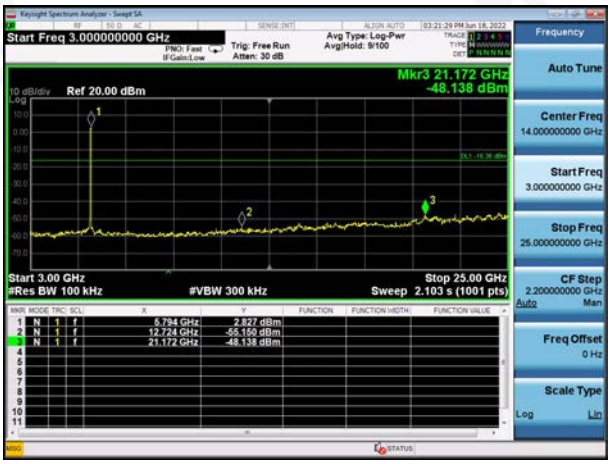
CH06





30MHz~3GHz





3GHz~25GHz

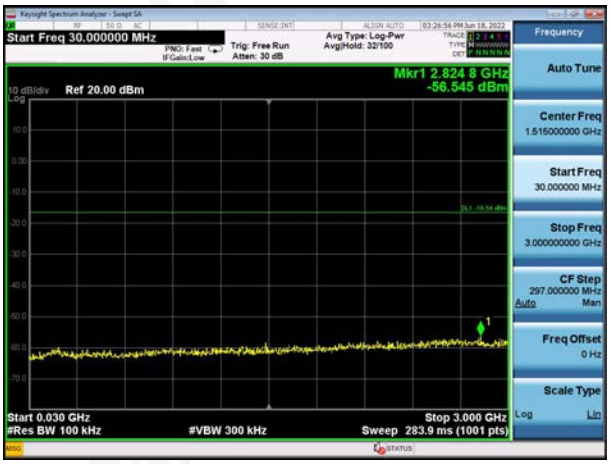
802.11a

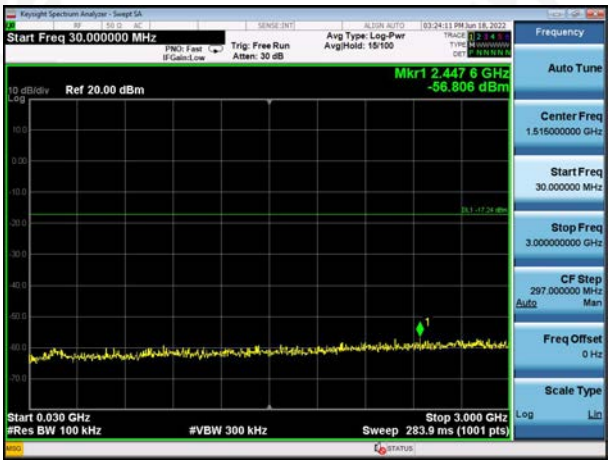
Highest channel

Ant A

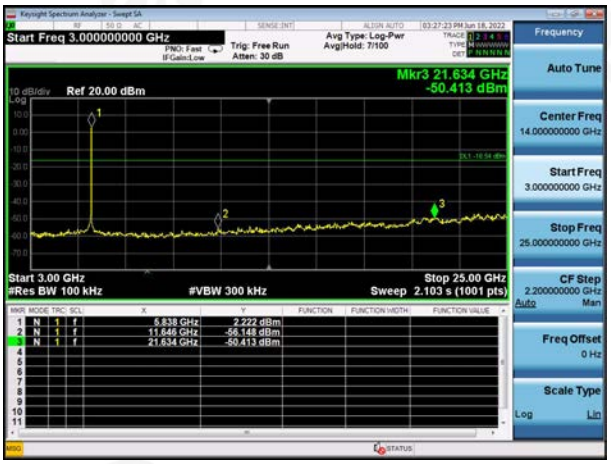
Ant B

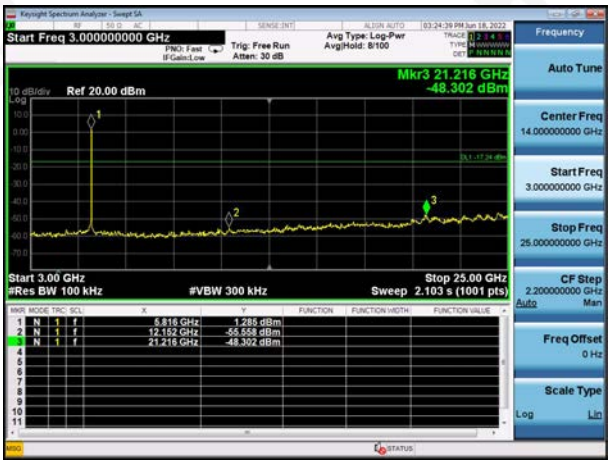
CH06





30MHz~3GHz





3GHz~25GHz

10.Frequency Stability Measurement

10.1 LIMIT

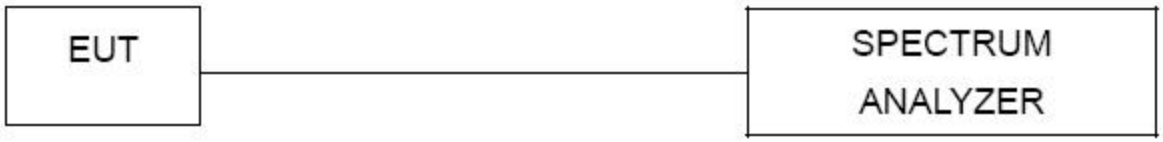
Manufactures of U-NII devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified in the user's manual.

The transmitter center frequency tolerance shall be ± 20 ppm maximum for the 5 GHz band (IEEE 802.11n specification).

10.2 TEST PROCEDURES

1. The transmitter output (antenna port) was connected to the spectrum analyzer.
2. EUT have transmitted absence of modulation signal and fixed channelize.
3. Set the spectrum analyzer span to view the entire absence of modulation emissions bandwidth.
4. Set RBW = 10 kHz, VBW = 10 kHz with peak detector and maxhold settings.
5. fc is declaring of channel frequency. Then the frequency error formula is (fc-f)/fc × 106 ppm and the limit is less than ±20ppm (IEEE 802.11nspecification).
6. The test extreme voltage is to change the primary supply voltage from 85 to 115 percent of the nominal value
7. Extreme temperature is -20°C~70°C.

10.3 TEST SETUP LAYOUT



10.4 EUT OPERATION DURING TEST

The EUT was programmed to be in continuously un-modulation transmitting mode.

10.5 TEST RESULTS

Temperature :	26 ℃	Relative Humidity :	54%
Pressure :	1012 hPa	Test Mode :	TX

Record the wors test data for Antenna B in report.

5.2G

802.11a

Reference Frequency(Middle Channel): 5200 MHz			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		MCF	Error (ppm)
50	12.0	55	0.00951
40	12.0	51	0.00882
30	12.0	43	0.00743
20	12.0	32	0.00553
10	12.0	24	0.00415
0	12.0	26	0.00449
-10	12.0	21	0.00363
-20	12.0	32	0.00553
-30	12.0	43	0.00743

802.11ac20

Reference Frequency(Middle Channel): 5200MHz			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		MCF	Error (ppm)
50	12.0	63	0.01089
40	12.0	43	0.00743
30	12.0	32	0.00553
20	12.0	26	0.00449
10	12.0	22	0.00380
0	12.0	12	0.00207
-10	12.0	13	0.00225
-20	12.0	21	0.00363
-30	12.0	32	0.00553

802.11ac40

Reference Frequency(Middle Channel): 5190MHz			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		MCF	Error (ppm)
50	12.0	60	0.01052
40	12.0	53	0.00930
30	12.0	42	0.00725
20	12.0	40	0.00751
10	12.0	34	0.00587
0	12.0	32	0.00552
-10	12.0	34	0.00587
-20	12.0	41	0.00722
-30	12.0	51	0.00880

802.11ac80

Reference Frequency(Middle Channel): 5210MHz			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		MCF	Error (ppm)
50	12.0	60	0.01088
40	12.0	52	0.00902
30	12.0	42	0.00743
20	12.0	41	0.00710
10	12.0	36	0.00623
0	12.0	31	0.00552
-10	12.0	34	0.00589
-20	12.0	43	0.00745
-30	12.0	52	0.00902

802.11n40

Reference Frequency(Middle Channel): 5190MHz			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		MCF	Error (ppm)
50	12.0	61	0.01047
40	12.0	51	0.00902
30	12.0	41	0.00710
20	12.0	43	0.00745
10	12.0	34	0.00587
0	12.0	32	0.00552
-10	12.0	34	0.00587
-20	12.0	42	0.00725
-30	12.0	52	0.00900

802.11n20

Reference Frequency(Middle Channel): 5200MHz			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		MCF	Error (ppm)
50	12.0	53	0.00928
40	12.0	43	0.00745
30	12.0	33	0.00583
20	12.0	23	0.00398
10	12.0	22	0.00380
0	12.0	12	0.00207
-10	12.0	13	0.00225
-20	12.0	36	0.00622
-30	12.0	22	0.00380

So, Frequency Stability Versus Input Voltage is:

802.11a

Reference Frequency(Middle Channel): 5200 MHz			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		Frequency	Error (ppm)
20	12.0	42	0.00725
	12.0	21	0.00363
	12.0	43	0.00743

802.11ac20

Reference Frequency(Middle Channel): 5200 MHz			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		Frequency	Error (ppm)
20	12.0	55	0.00951
	12.0	32	0.00553
	12.0	33	0.00570

802.11ac40

Reference Frequency(Middle Channel): 5190 MHz			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		Frequency	Error (ppm)
20	12.0	42	0.00725
	12.0	21	0.00363
	12.0	43	0.00743

802.11ac80

Reference Frequency(Middle Channel): 5210 MHz			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		Frequency	Error (ppm)
20	12.0	42	0.00727
	12.0	33	0.00570
	12.0	43	0.00743

802.11n40

Reference Frequency(Middle Channel): 5190 MHz			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		Frequency	Error (ppm)
20	12.0	43	0.00743
	12.0	44	0.00759
	12.0	42	0.00725

802.11ac20

Reference Frequency(Middle Channel): 5200 MHz			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		Frequency	Error (ppm)
20	12.0	44	0.00759
	12.0	32	0.00553
	12.0	43	0.00743

5.8G

802.11a

Reference Frequency(Middle Channel): 5785 MHz			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		MCF	Error (ppm)
50	12	43	0.00743
40	12	51	0.00882
30	12	23	0.00398
20	12	26	0.00449
10	12	23	0.00398
0	12	26	0.00449
-10	12	22	0.00380
-20	12	36	0.00622
-30	12	26	0.00449

802.11ac20

Reference Frequency(Middle Channel): 5785MHz			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		MCF	Error (ppm)
50	12	42	0.00726
40	12	24	0.00415
30	12	32	0.00553
20	12	24	0.00415
10	12	13	0.00225
0	12	12	0.00207
-10	12	13	0.00225
-20	12	21	0.00363
-30	12	32	0.00553

802.11ac40

Reference Frequency(Middle Channel): 5795MHz			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		MCF	Error (ppm)
50	12	61	0.01053
40	12	54	0.00932
30	12	42	0.00725
20	12	44	0.00759
10	12	34	0.00587
0	12	32	0.00552
-10	12	34	0.00587
-20	12	42	0.00725
-30	12	51	0.00880

802.11ac80

Reference Frequency(Middle Channel): 5775MHz			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		MCF	Error (ppm)
50	12	52	0.00900
40	12	41	0.00710
30	12	43	0.00745
20	12	41	0.00710
10	12	36	0.00623
0	12	32	0.00554
-10	12	34	0.00589
-20	12	32	0.00554
-30	12	52	0.00900

802.11n20

Reference Frequency(Middle Channel): 5785MHz			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		MCF	Error (ppm)
50	12	54	0.00932
40	12	34	0.00587
30	12	32	0.00552
20	12	24	0.00415
10	12	13	0.00225
0	12	12	0.00207
-10	12	13	0.00225
-20	12	34	0.00587
-30	12	42	0.00725

802.11n40

Reference Frequency(Middle Channel): 5795MHz			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		MCF	Error (ppm)
50	12	61	0.01053
40	12	54	0.00932
30	12	42	0.00725
20	12	44	0.00759
10	12	36	0.00623
0	12	32	0.00554
-10	12	34	0.00589
-20	12	42	0.00725
-30	12	51	0.00880

So, Frequency Stability Versus Input Voltage is:

802.11a

Reference Frequency(Middle Channel): 5785 MHz			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		Frequency	Error (ppm)
20	12	55	0.00951
	12	32	0.00553
	12	33	0.00570

802.11ac20

Reference Frequency(Middle Channel): 5785 MHz			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		Frequency	Error (ppm)
20	12	33	0.00570
	12	21	0.00363
	12	43	0.00743

802.11ac40

Reference Frequency(Middle Channel): 5795 MHz			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		Frequency	Error (ppm)
20	12	42	0.00725
	12	44	0.00759
	12	43	0.00743

802.11ac80

Reference Frequency(Middle Channel): 5775 MHz			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		Frequency	Error (ppm)
20	12	43	0.00743
	12	44	0.00762
	12	42	0.00727

802.11ac20

Reference Frequency(Middle Channel): 5785 MHz			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		Frequency	Error (ppm)
20	12	43	0.00743
	12	44	0.00762
	12	43	0.00743

802.11ac40

Reference Frequency(Middle Channel): 5795 MHz			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		Frequency	Error (ppm)
20	12	42	0.00725
	12	21	0.00363
	12	43	0.00743

11.ANTENNA REQUIREMENT

Standard requirement:	FCC Part15 C Section 15.203
15.203 requirement: An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.	
EUT Antenna:	
The antenna is External Antenna, the best case gain of the antenna is 5dBi, reference to the appendix II for details	

12. TEST SETUP PHOTO

Reference to the appendix I for details.

13. EUT CONSTRUCTIONAL DETAILS

Reference to the appendix II for details.

※※※※※ END OF REPORT ※※※※※